Encoder Firmware

A1D-310-V4.06.09-AC

User's Manual

ACTi
Connecting Vision

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1. Recommended PC Specification

CPU	Core2Duo 2.13GHz and above
Memory	2 GB or above
Operating System	Windows XP with SP2 or above. Windows Vista / Windows 2003 / Windows 7 Internet Explorer 6.0 SP2 and above.
Video Resolution	SVGA or XGA with 1024x768 resolution

2. Preparation before setup

Connect to device and setup IP

Our IP device provides access through Internet Explorer. The IP address for your PC must be within the same subnet as the IP device. You need to match the TCP/IP settings between PC and IP device before you can access it via IE.

There are two ways to add devices to the network.

With DHCP server / router:

DHCP server assigns IP addresses to devices automatically. You can find them on the network with our **IP Utility**. It is available on NVR CD and our website:

http://www.acti.com/IP_Utility

Run IP Utility to start auto device search. Click on the underlined IP links to access your IP devices. You do not need to change IP.

Without DHCP server / router:

Please assign a static IP for each device and add them one by one. Connect to the first device by following steps 1 to 5 below.

Before adding more devices into the network, you need to change the current device to a new IP address so no two devices have IP conflict. (Steps 6 to 9).

For adding devices without DHCP, please see following steps.

1. Connect the PC to the Network Switch with the CAT5 cable, and change your PC's IP to 192.168.0.99 / Subnet Mask 255.255.255.0 (101 is just a sample, it may be any number from 1 to 254 except 100.)

2. Connect the device to your Network Switch. If it is a PoE enabled Switch, then the device is powered on. If it is NOT a PoE enabled Switch, please also plug in the Power Adapter.

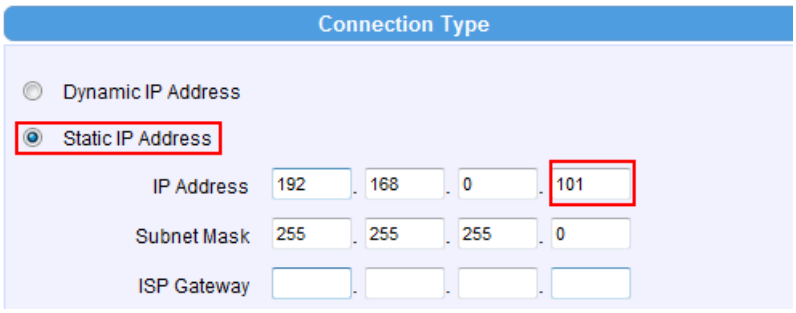
3. Open Internet Explorer (Version 6.0 or above) , and type in **Default IP:**

   http://192.168.0.100

4. When you see the login window, please input default user and password:

   Default Username: Admin Password: 123456

5. After you log in, you will see the video from IP device. To go to the main menu, click the "Setup" button on the top left.
6. Please go to Network -> Connection Type. Change the IP mode to Static and the IP address to 192.168.0.101 or any other unused IP (Avoid 192.168.0.100, the IPs of your PCs and other devices already in network.). Click "Apply" then click Maintain -> Save & Reboot.



7. Internet Explorer will close after a few seconds. This is normal.

8. Wait for 30 seconds and open IE again by typing in the **new IP**. (In this example, 192.168.0.101). For later device you add into the network, please choose an IP that does not is not used by any existing device.

9. If you have more than one device, continue again from step 2. Assign different new IP to each camera (for instance -> 192.168.0.102, 192.168.0.103 …). You do not need to unplug the existing devices from the switch because there is no IP conflict.

Sample screenshots to setup IP of your PC (Win XP)

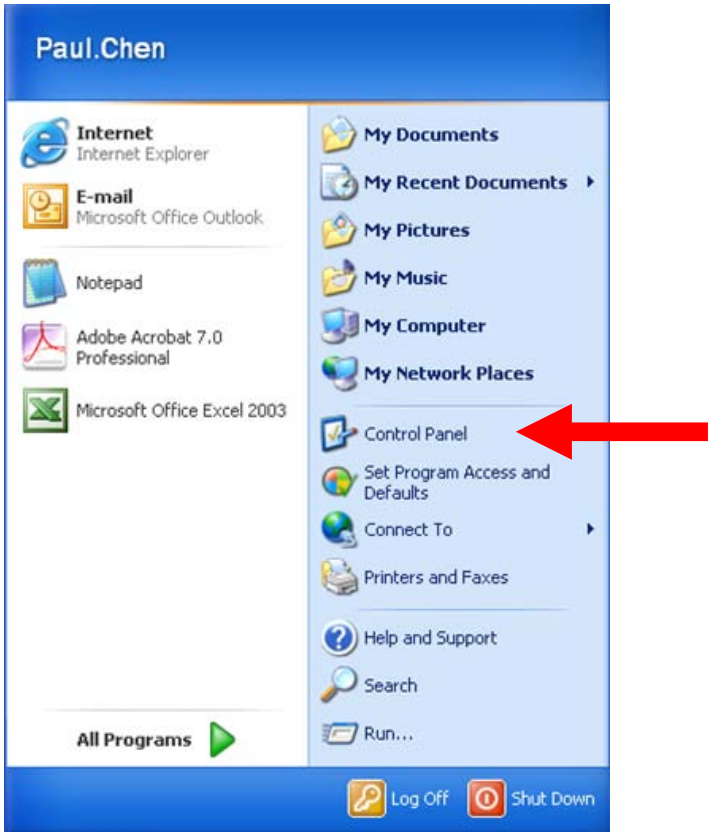
The procedures below show how to setup your IP on Windows XP. If you use operating system other than Windows XP, please refer to OS manuals for proper setup procedures.

STEP1

Start up your PC.

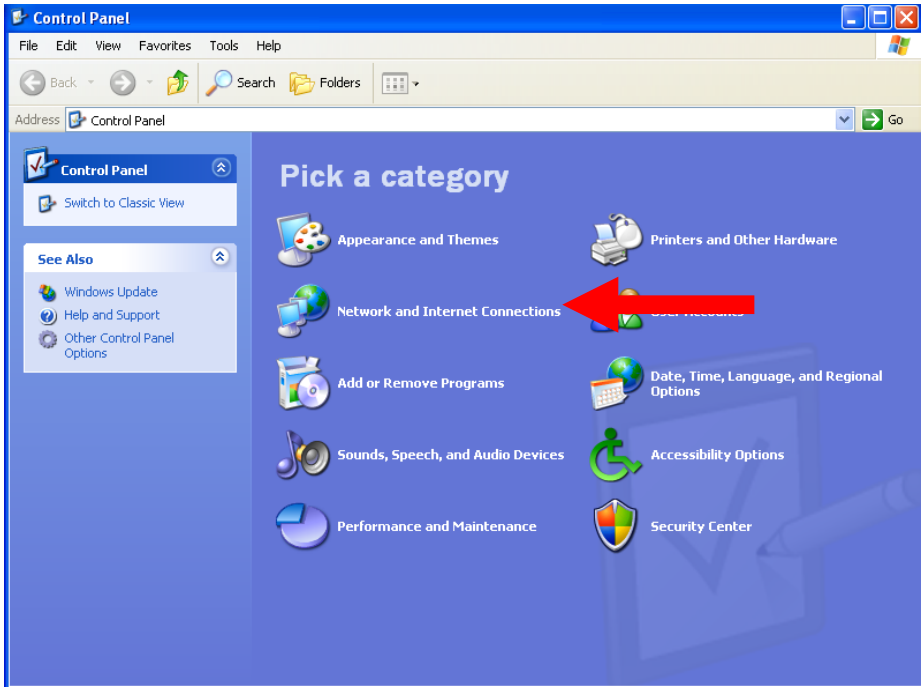
STEP2

Click the [Start] and select the "Control Panel"



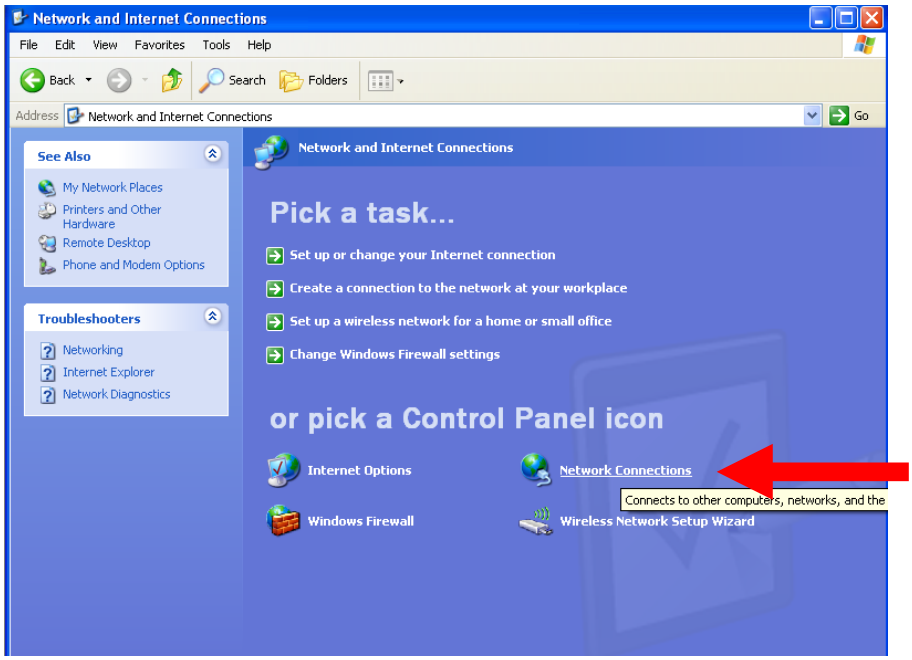
STEP3

Double-click the "Network and Internet connections" icon.



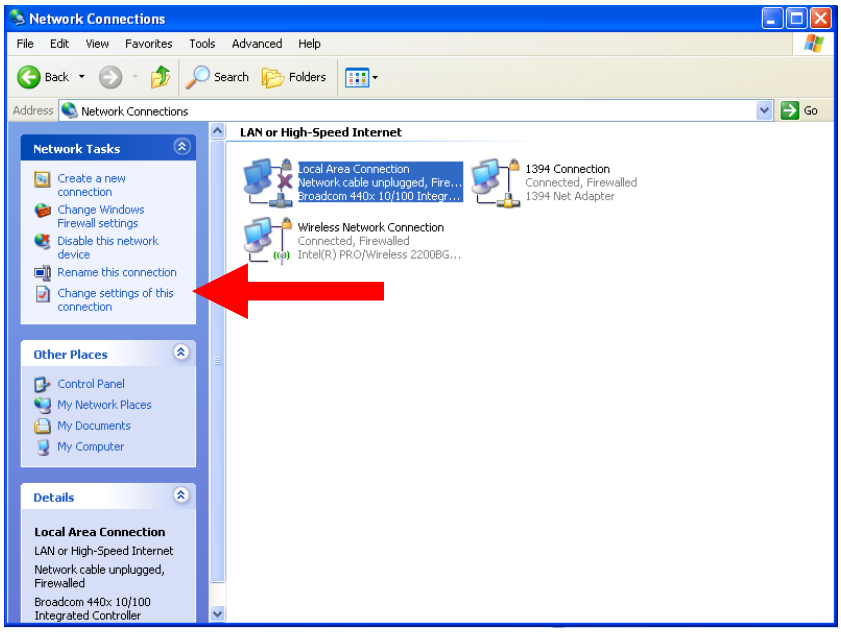
STEP4

Double-click the "Network connections" icon



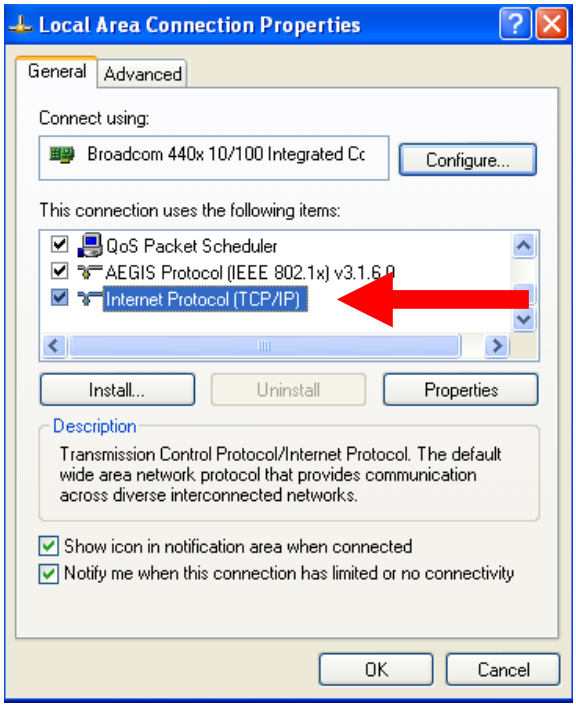
STEP5

Click “Local Area Connections”, and then click “Change settings of this connection” in the Network Task menu.



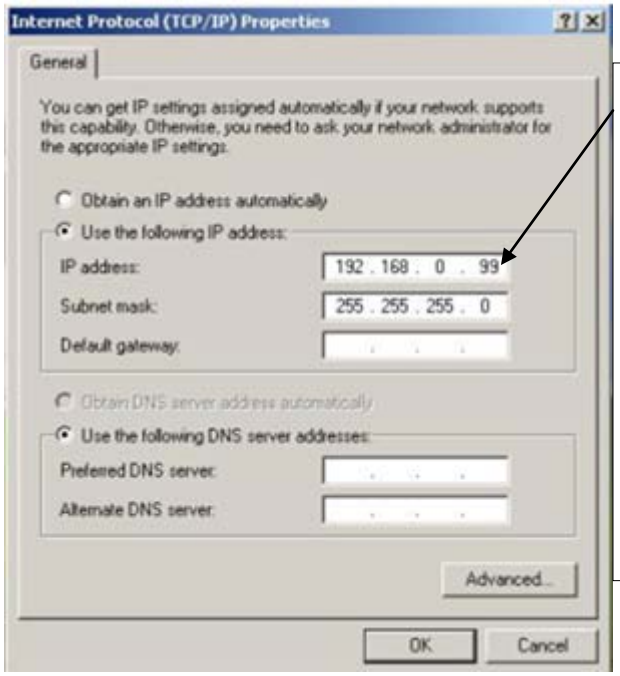
STEP6

Click “Internet Protocol (TCP/IP)”, and then click [Properties]



STEP7

Click the “Use the following IP address” radio button and enter the IP address and the subnet mask.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 0 . 99
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Please set the settings as below.

IP address: 192.168. 0.xxx
Subnet mask: 255.255.255. 0
(**NOTE**: xxx should be a number from 1 to 254 except 100, which is used by the IP device. Please also make sure that no two equipments use the same IP address in the same network.)

STEP8

Click the [OK] button and the window dialog box will close.

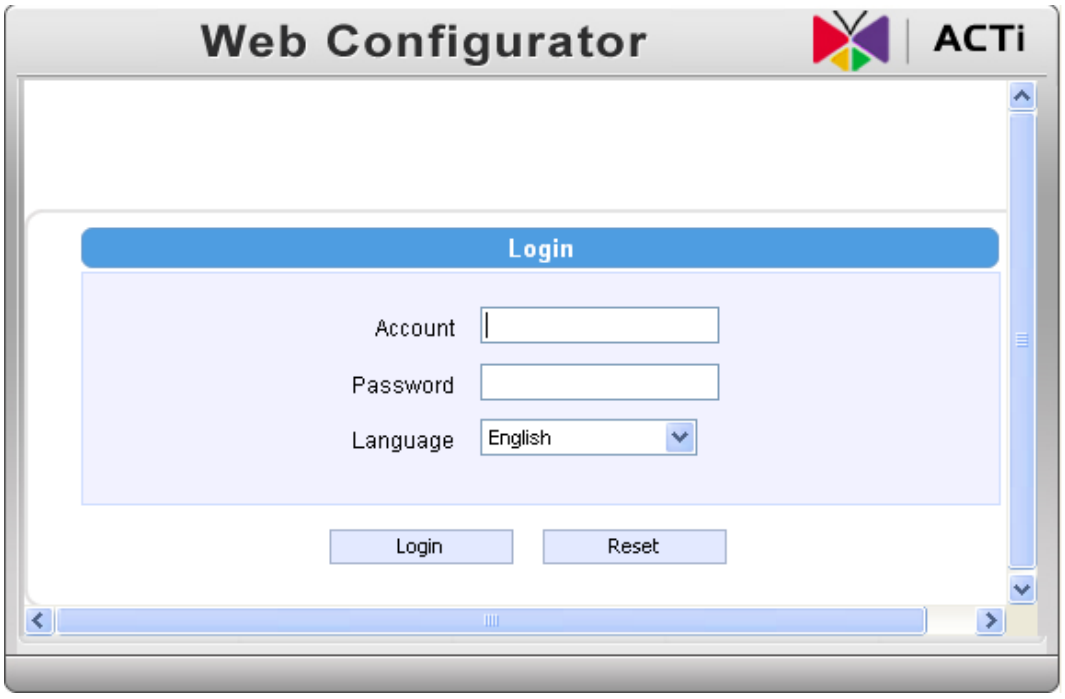
3. Configuring the IP device

This section describes how to configure the IP device. The administrator has unlimited access to all settings, while the normal user can only view live video. The IP device is configured under a standard browser (Microsoft Internet Explorer 6.0 or above).

Login

STEP1
Open Internet Explorer 6.0 or above. You may download the latest version from:
http://www.microsoft.com/windows/ie/downloads/default.mspx

STEP2
Enter the IP address of the IP device and press enter to go to Login Page.
The default IP address is "**192.168.0.100**"



STEP3
Enter the Account name and the Password
(Default Account: Admin / Password: 123456).

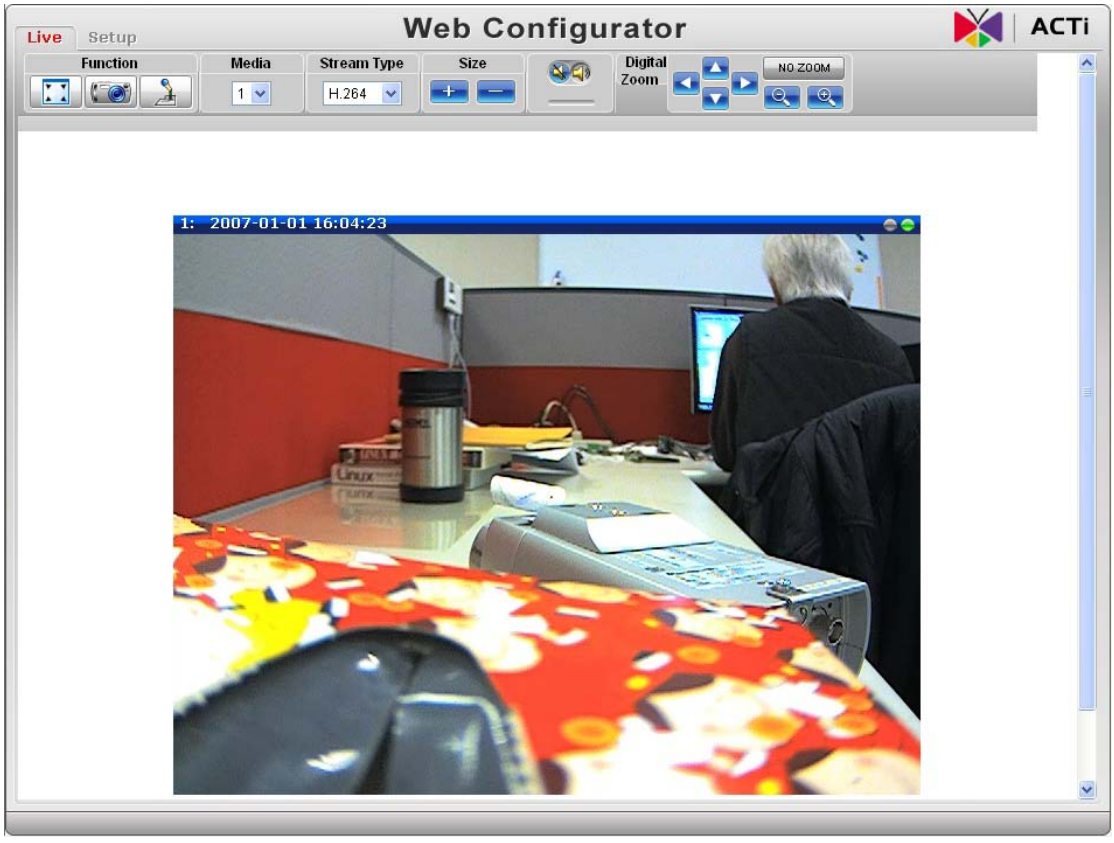
STEP4

Select the language of the IP device user interface.

You can select between English, Traditional Chinese, Japanese, Spanish, Italian, German, Portuguese, Greek, Russia, Turkey, Indonesia and Swedish. This user interface setting will disappear once you log out, if you want to change the default user interface language, please go to [Host] in the “Host & Date” section under the setup tab.

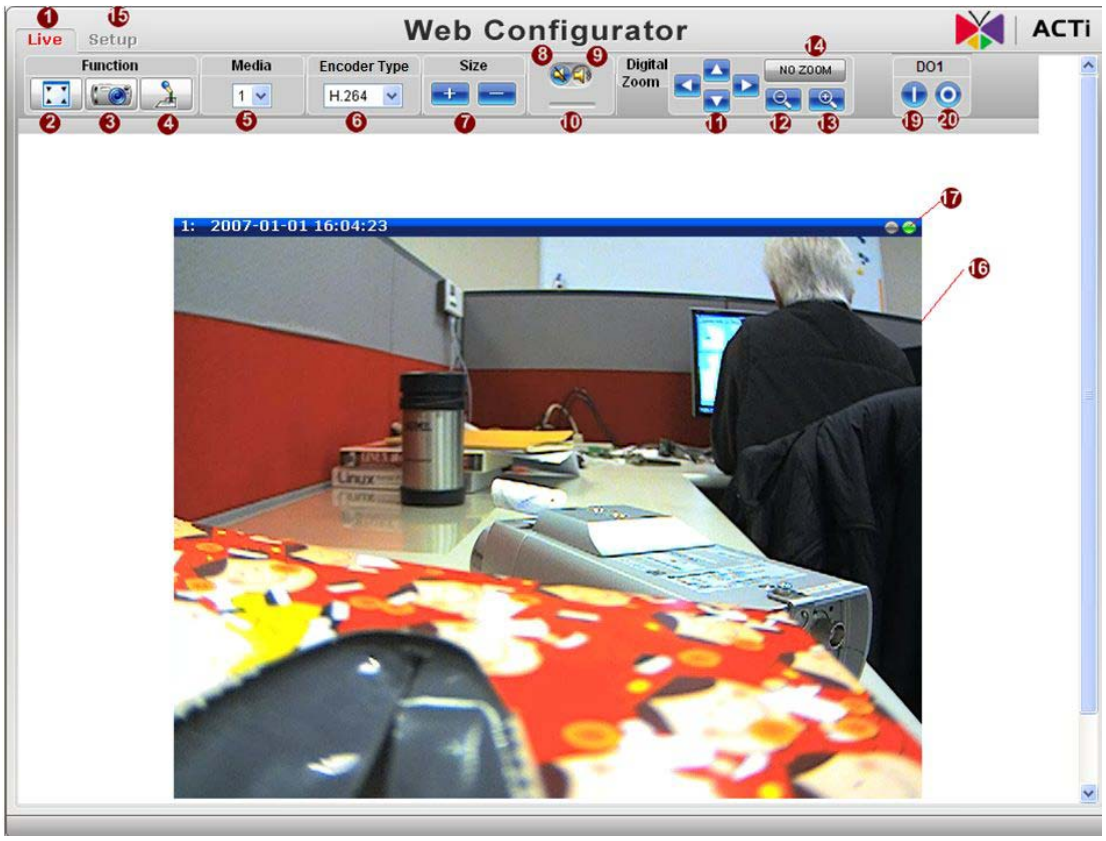
STEP5

Click the Login button to login or click the Reset button to re-enter again. Once you’ve logged in, the “Live page” will be displayed as below.



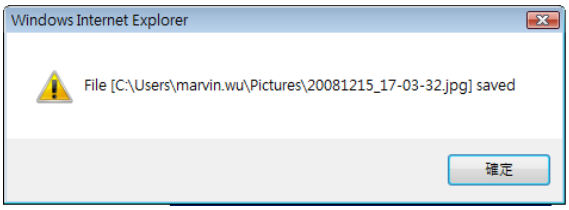
Live view

Click the ❶ [Live] tab to show [Live page]. Refer to the table below for how to configure each setting.



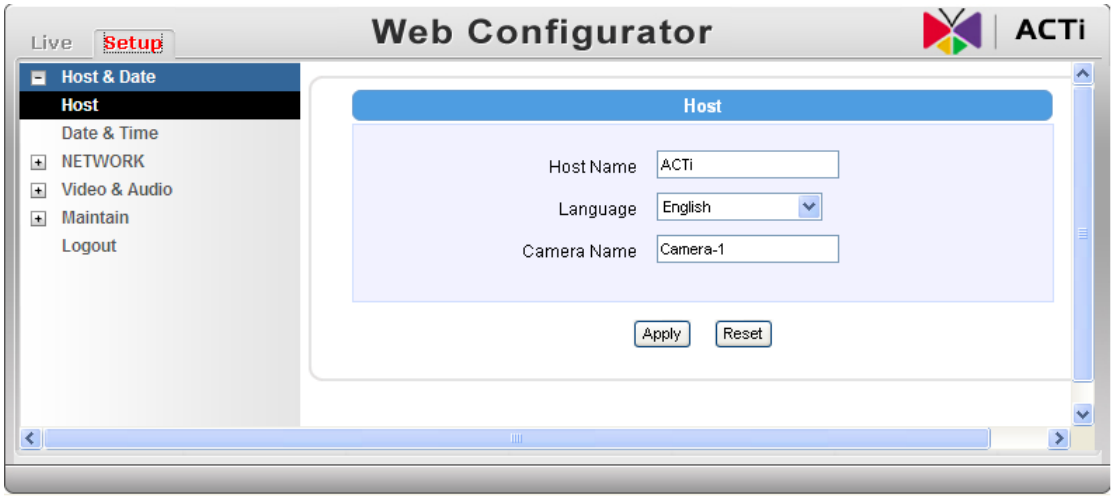
Function List

Function	Description
❷ Full Screen	Click the icon to stretch the preview to full screen. You can click “Esc” button on the keyboard to return to previous display.
❸ Snapshot	Click the icon “ ” to take a snapshot. The snapshot picture will be saved to the default folder “C:\Users\”account name”\Picture”, in the format of YYYYMMDD_HH_mm_ss.jpg.

	
4 Audio out	Click the icon to enable the audio out from PC to IP camera or video server. When it is enabled, your voice will be transferred to the audio out of the IP camera or video server. NOTE: you will need to have a microphone connected to your PC to do that.
5 Media	If dual stream mode is enabled, click 5 to select which stream to display (Media 1 or 2). The default is single stream only. To change to dual stream mode, please refer to “Media 1” section under “Setup” tab
6 Encoder Type	Click 6 to select the compression codec used in video encoding. The Encoder type option includes MPEG-4, MJPEG and H.264. Once selected, the video server/IP camera will start to send video in new stream type.
7 Display size	Click or of 7 to adjust 16 display screen size
10 Audio in	Click the icon 8 to mute or the icon 9 to receive audio in from the video server/IP camera. Drag the volume bar 10 to adjust the volume.

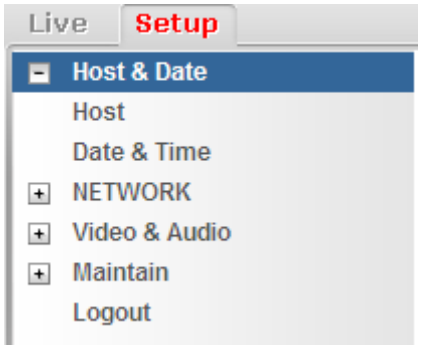
11 Digital Zoom	 Digital zoom enables you to zoom into the image. You can click 13 to zoom in and click 12 to zoom out. You can click the 14 "no zoom" button to cancel all zoom-in and go back to original status (no zoom status). When you digitally zoom in the video, you can click to pan/tilt the video up, down, left and right. NOTE: This pan/tilt function does not work if the video is not zoomed-in (no zoom status).
17 Network status	Indicates the network state. If the light on the right is green, it means the network is ok. If the light is gray, it means the network is broken. The light on the left is not used
DO Setting	Click 19 to set DO output level to High. Click 20 to set DO output level to Low. If your device has more than one DO available, each DO is controlled separately.

If you want to setup this IP camera/video server, please click the 15 [Setup] tab to switch to "Setup Page" as displayed below.



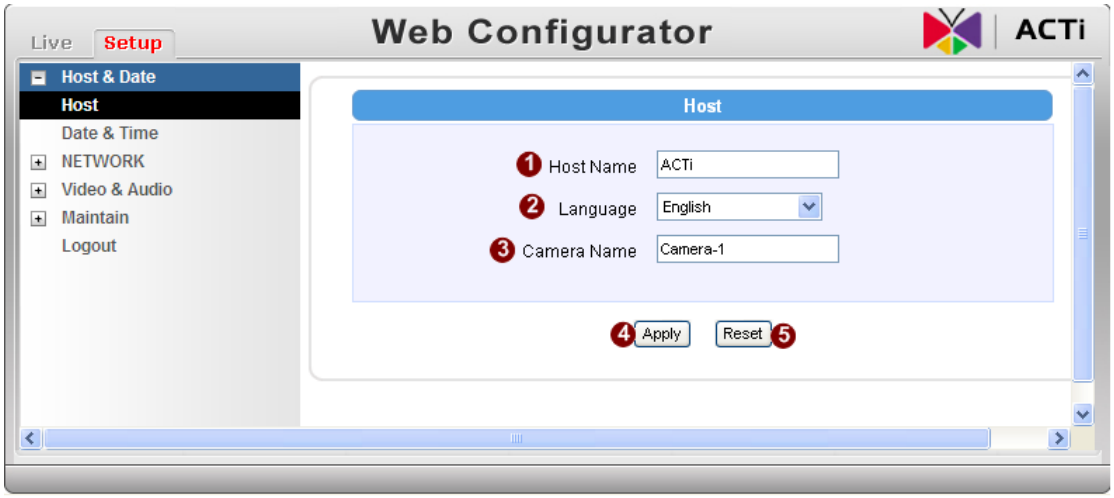
Host Section

Click the [Host] item on the “Setup Page”.



Host

Click the [Host] to enter Host settings page. Refer to the table below for how to configure each setting.

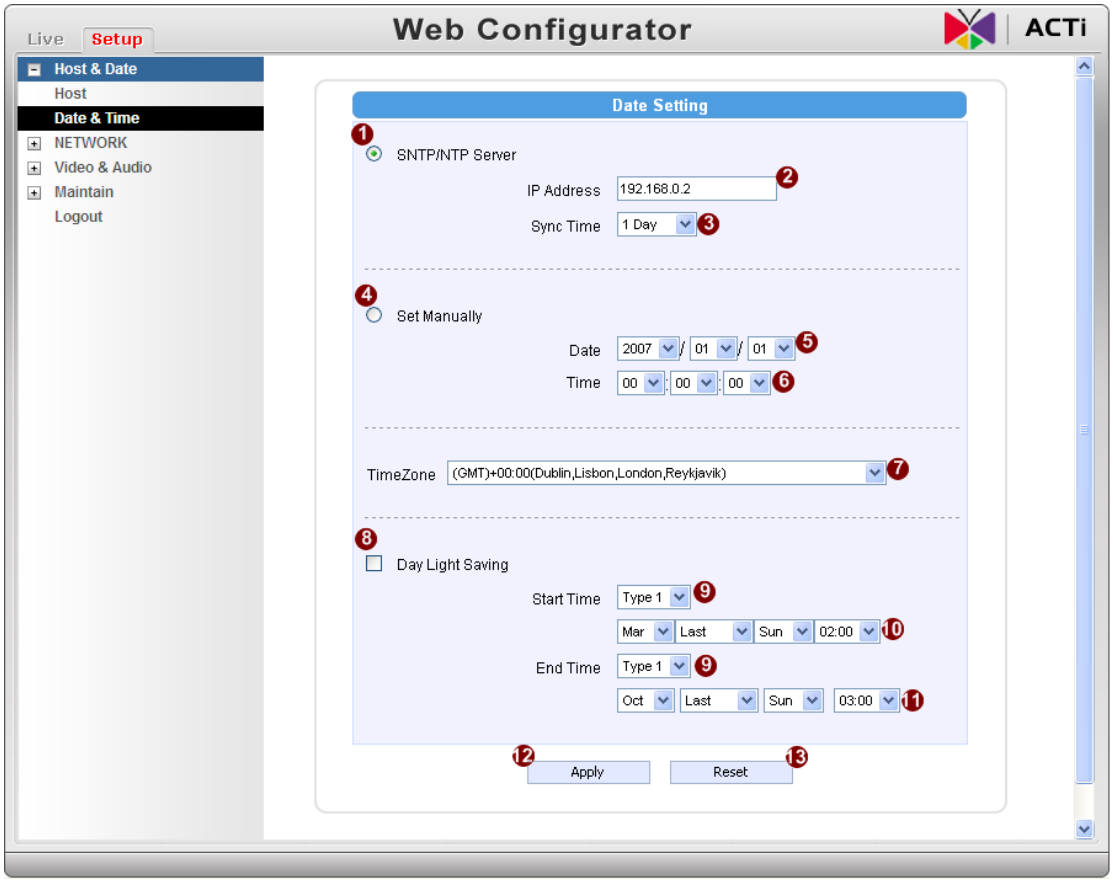


Parameters	Description
1 Host name	Enter a host name, and this host name will be shown when you use the IP utility or the SDK to search for the IP device.
2 Language	Select the language of default user-interface. Each user login will see the default user-interface first.
3 Camera name	The camera name is reserved for customer use.

Click the 4 [Apply] button to confirm the settings or click the 5 [Reset] button to re-enter the parameters.

Date & Time Setting

Click the [Date & Time] item under Host & Date section to see Date & Time Page. Refer to the table below for how to configure each setting.



Date Setting

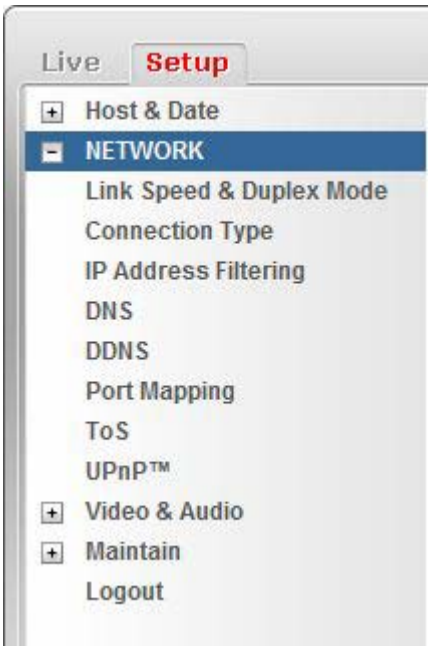
Parameters	Description
❶SNTP/NTP server	Click this to enable IP device's SNTP/NTP function. This enables this IP device to synchronize its time settings with a SNTP/NTP server. You can use this function to make sure all your IP devices' time is the same. Additionally, with our embedded digital-time-code in the streaming, you can tell the event sequence accurately. ❷ **IP address**: Enter the IP address of the SNTP/NTP server. ❸ **Sync time**: Select the time interval for this IP device to synchronize its time.
❹ Set manually	Click this to manually setup the date & time. ❺ **Date** : Select the date ❻ **Time**: Select the time

❼ Time zone	Select the time zone offset for local settings
❽Day Light Saving	Select Type 1 ❾ to specify daylight saving time by week number in a month; select Type 2 to specify daylight saving time by date. ❿ **Start Time**: Select the daylight savings start time. ⓫ **End Time**: Select the daylight savings end time.

Click the ⓬ [Apply] button to confirm the settings or click the ⓭ [Reset] button to re-enter the parameters.

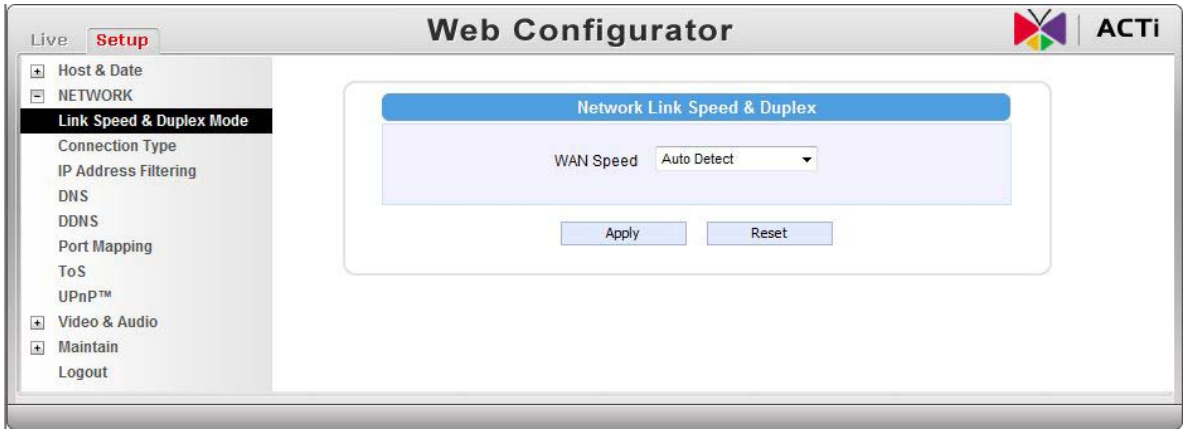
Network Section

Click the ⊞ [Network] item on the “Setup Page”.



Network link speed & duplex mode

Click the [Link Speed & Duplex Mode] item in the network section to display the “Link Speed & Duplex Mode Setting Page”. Refer to the table below for how to configure each setting.

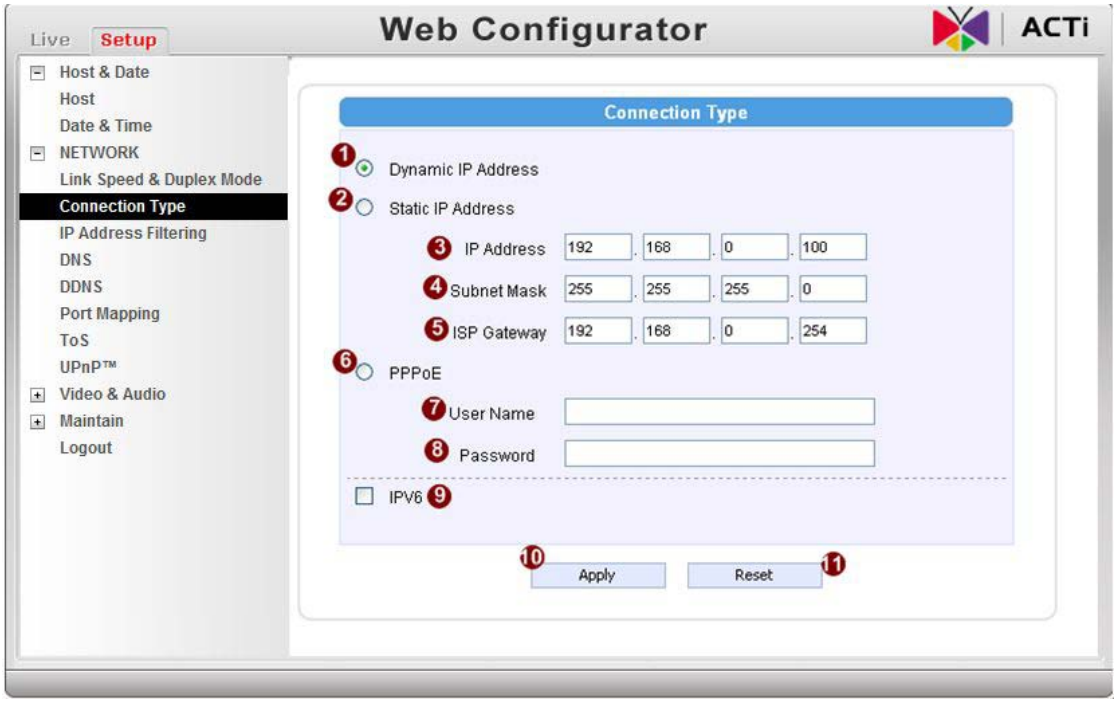


Parameters	Description
❶ WAN speed	This item lets you select the network transmission speed. You can select from 1. **Auto detect** (default setting) 2. **100Mbps / Full duplex** 3. **100Mbps / Half duplex** 4. **10Mbps / Full duplex** 5. **10Mbps / Half duplex**

Click the ❷ [Apply] button to confirm the settings or click the ❸ [Reset] button to re-enter the parameters.

Connection Type

Click the [Connection Type] item to display the “Connection Type Page”. Refer to the table below for how to configure each setting.



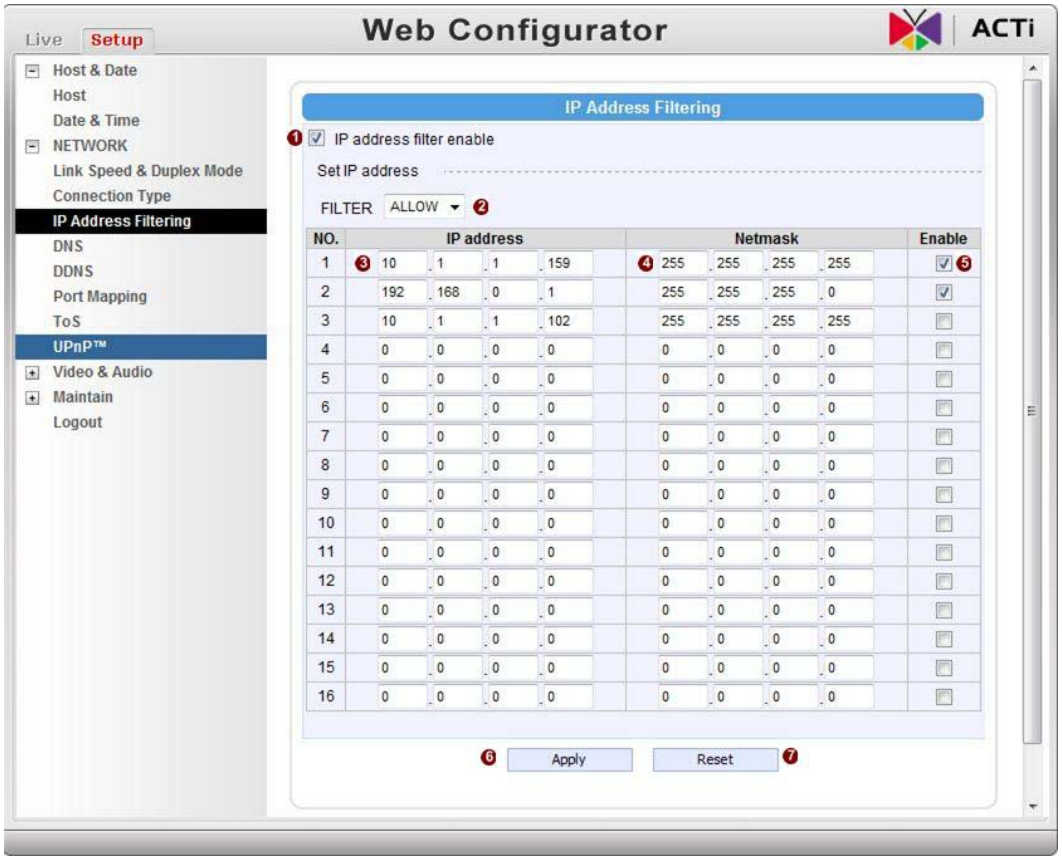
Parameters		Description
1	Dynamic IP address	Click this to enable IP device’s DHCP function. It will acquire its WAN port IP address from a DHCP server within the same network. (You must have a DHCP server in order to enable this function.)
2	Static IP address	Click this to manually enter the IP address. 3 **IP address**: Enter the WAN port IP address. 4 **Subnet mask**: Enter the subnet mask of WAN port. If IP address is changed, adjust the subnet mask accordingly. 5 **ISP gateway**: Enter the IP address of the gateway (the router).
6	PPPoE	Click this when you connect IP device directly to the xDSL modem. 7 **User name**: Enter the user name of your xDSL account. 8 **Password**: Enter the password of your xDSL account. **Note**: You have to click the [Save Reboot] after you click the [Apply button] to let this IP device start xDSL connections.
9	IPV6	Click the check box to support IPV6 protocol

Click the ⑩ [Apply] button to confirm the settings or click the ⑪ [Reset] button to re-enter the parameters.

IP Address Filtering

> **WARNING:** Please be very careful when using this function, as you may lose access to your camera if you make mistakes in setup. You may either accidentally deny yourself access, or forgot to include your own IP address in the allowed address list. You will need to perform hard reset to be able to access the device again.

Click the [IP Address Filter] item to display the “IP Address Filtering Page”. Refer to the table below for how to configure each setting.



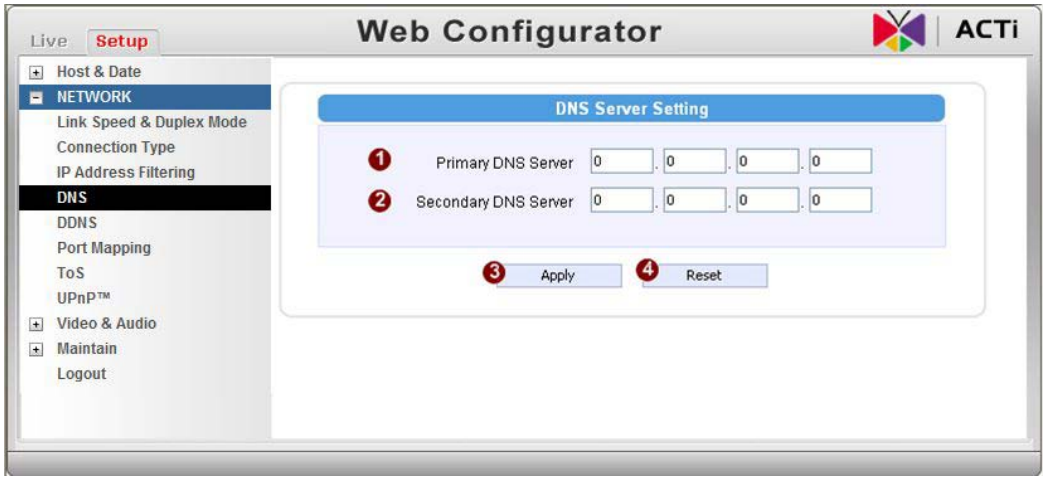
Parameters		Description
1	IP Address Filter Enable	Check this box to enable IP Address Filtering.
2	Filter Type	The filter can be set in either “Allow” mode or “Deny” mode. 1. “Allow” mode will refuse access to all IP addresses except the ones listed below. 2. “Deny” mode will accept all incoming access except the IP addresses listed below.

		Make sure you include the Netmask in your consideration.
❸	IP Address	The IP address you wish to allow or deny. Please note that the actual range is modified by the Netmask.
❹	Netmask	Using Netmask allows you to set filtering for a whole range of IP address at once, without the need to enter all of them individually. If you are not sure about the function of netmask, then you should use 255.255.255.255, and it will affect only a single IP address per line of entry, or use 255.255.255.0 to use the same setting for all IP addresses starting with the same three numbers. .
❺	Enable	For each entry, you must check this box for it to be effective. For an entry that you no longer need but does not wish to delete, you can uncheck it, and the system will remember it for future use. If a new entry that has never been used before does not have Enable checked, then it will not be stored in memory.
❻	Apply	Click this to use the current displayed info to do IP Address filtering. If you setup correctly, it will change into a grayed out “Success” in a few seconds.
❼	Reset	Click this button to re-enter the parameters.

Click the ❻ [Apply] button to confirm the settings or click the ❼ [Reset] button to re-enter the parameters.

DNS

Click the [DNS] item to display the “DNS Server Settings Page”. Refer to the table below for how to configure each setting.

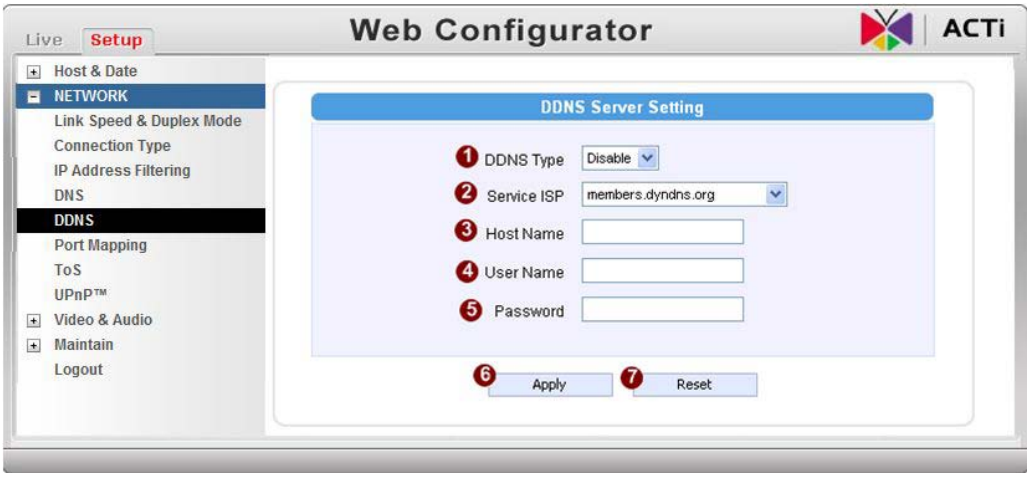


Parameters		Description
1	Primary DNS server	Defines the IP address of the primary DNS server. This is used for identifying this computer by name instead of IP address.
2	Secondary DNS server	The IP address of the secondary DNS server. It will be used once the primary DNS server fails.

Click the 3 [Apply] button to confirm the settings or click the 4 [Reset] button to re-enter the parameters.

DDNS

Click the [DDNS] item to display the “DDNS Server Setting Page”. Refer to the table below for how to configure each setting.

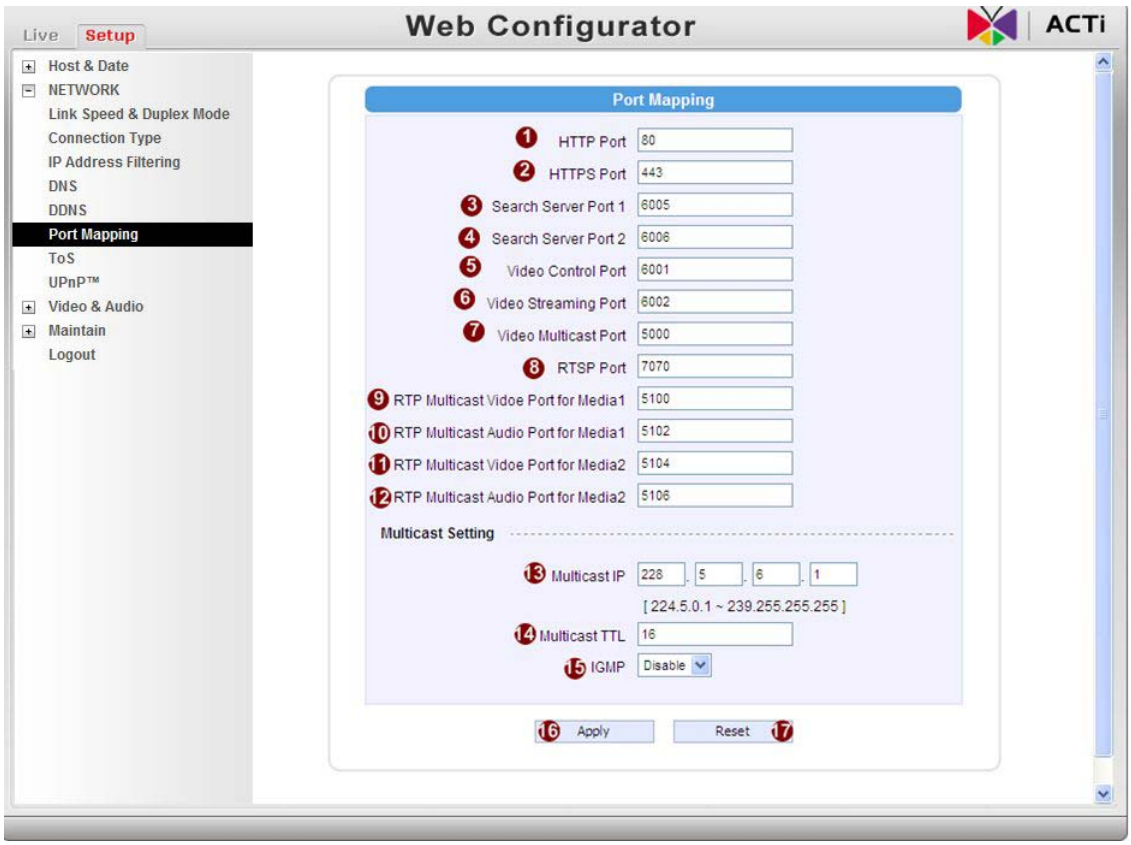


Parameters	Description
1 DDNS type	Click this to enable IP device’s DDNS function. DDNS function enables user to connect to this IP device by domain name even if its IP address is not static.
2 Service ISP	Click one of the DDNS service providers. You can visit their website to get a DDNS service account for this IP device.
3 Host name	Enter the host name of your DDNS service account. (ex: xxxx.dyndns.org)
4 User name	Enter the user name to login your DDNS service account.
5 Password	Enter the password to login your DDNS service account.

Click the 6 [Apply] button to confirm the settings or click the 7 [Reset] button to re-enter the parameters.

Port Mapping

Click the [Port Mapping] item to display the “Port Mapping Page”. Refer to the table below for how to configure each setting.



Parameters	Description
1 HTTP port	Select the port assigned for HTTP protocol access
2 HTTPS	Select the port assigned for HTTPS protocol access
3 Search server port1	Select the first port used by server search applications to detect this IP device. (e.g. IP utlity)
4 Search server port2	Select the first port used by server search applications to detect this IP device. (e.g. IP utlity)
5 Video control port	Select the port used to support video control function by application programs. (e.g. NVR)
6 Video streaming port (TCP Only)	Select the port used by this IP device for Video Streaming.
7 Video Multicast Port	Enable/disable multicast audio streaming
8 RTSP port	Select the port assigned for RTSP protocol access

⑨ RTP Multicast Video Port for Media1	Select the port for the multicast video streaming of media1 via RTP protocol
⑩ RTP Multicast Audio Port for Media1	Select the port for the multicast audio streaming of media1 via RTP protocol
⑪ RTP Multicast Video Port for Media2	Select the port for the multicast video streaming of media2 via RTP protocol
⑫ RTP Multicast Audio Port for Media2	Select the port for the multicast audio streaming of media2 via RTP protocol
⑬ Multicast IP	Select the multicast IP. Default settings is 228.5.6.1
⑭ Multicast TTL	Select the multicast TTL. Default setting is 255.
⑮ IGMP	Select video type connected to the video-in of this IP device. If you use an incorrect video type, some images might be lost.

Click the ⑯ [Apply] button to confirm the settings or click the ⑰ [Reset] button to re-enter the parameters.

ToS

Click the [ToS] (Type of Service) item to display the “ToS Page”. Refer to the table below for how to configure each setting.

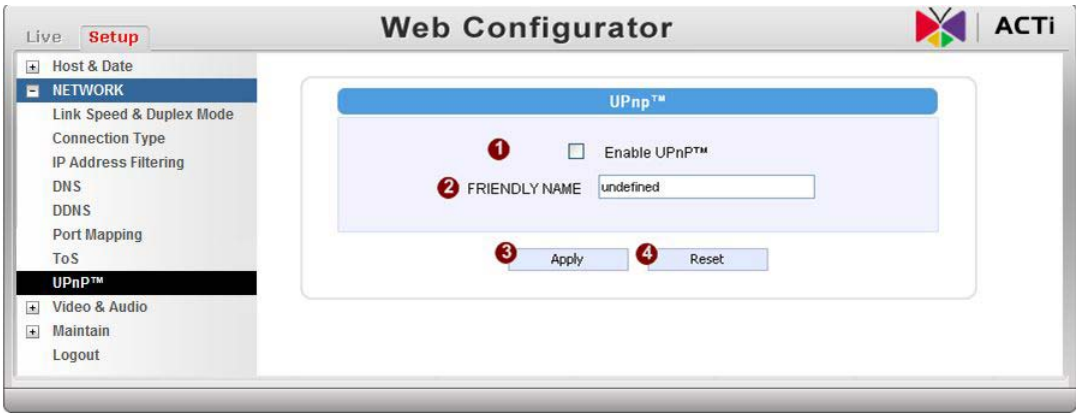
Parameters	Description
① TOS (type of service)	Select whether to add the TOS tag onto the streaming data. Streaming data with a higher priority TOS tag will be transmitted first when compared with other data.
② TOS priority	Select the TOS tag’s priority to be added onto the streaming. You can select between

	1.**Minimize-Delay** 2.**Maximize-throughout** 3.**Maximize-Reliability** 4.**Normal-Service**

Click the 3 [Apply] button to confirm the settings or click the 4 [Reset] button to re-enter the parameters.

UPnP™

Click the [UPnP™] item to display the "UPnP™ Setting Page".

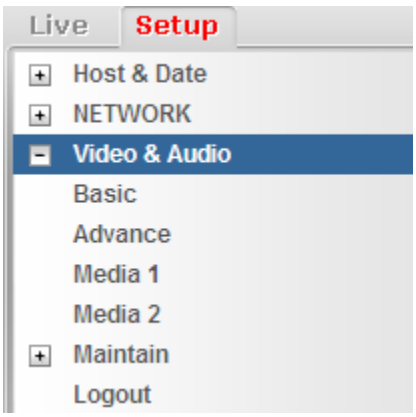


Click checkbox 1 to enable or disable the UPnP™ function. Edit the UPnP Friendly Name in text field. 2

Click the [Apply] button 3 to confirm the settings or click the [Reset] button 4 to re-enter the parameters.

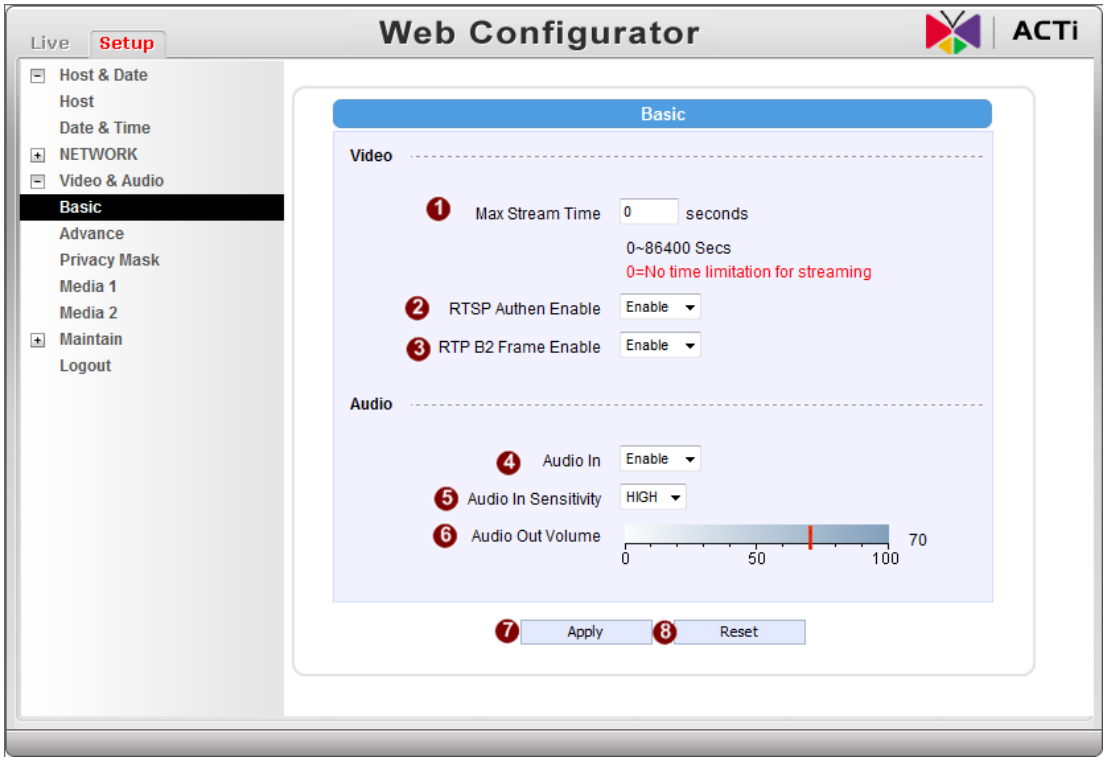
Video & Audio

Click the ⊞ [Video & Audio] item on the "Setup Page".



Basic

Click the [Basic] item to display the “Basic Page”. Refer to the table below for how to configure each setting.

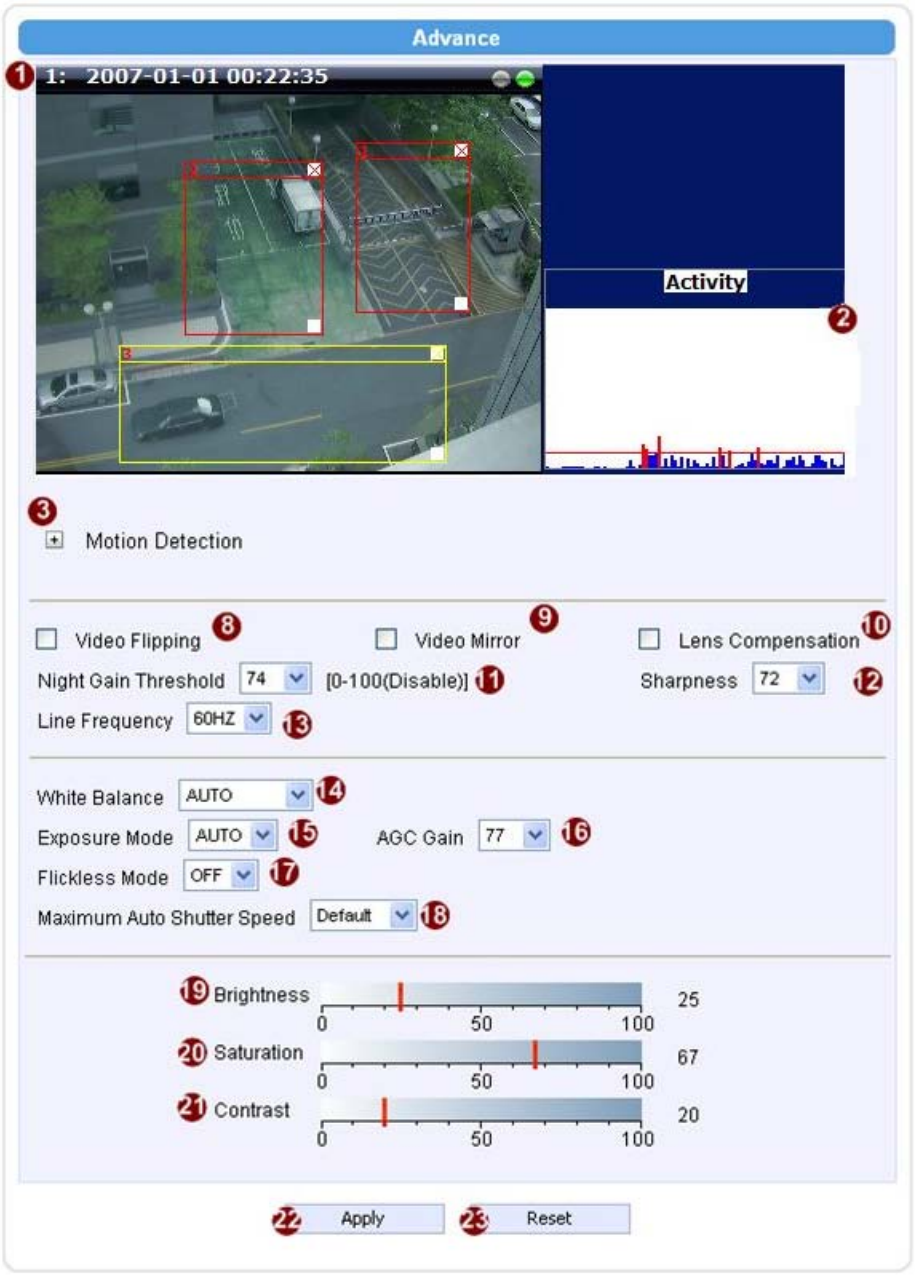


Parameters		Description
1	Maximum Stream Time	You can use this setting to limit the preview time in the Live Display Page. This function applies for user who logged in to this IP device to view the video. If the Maximum stream time is 0, this function will be disabled and there’s no limit on Live Display page preview.
2	RTSP Authen Enable	Check box to enable RTP streaming’s Account/Password authentication.
3	RTP B2 Frame Enable	Check box to enable the B2 frame in RTP streaming
4	Audio	Select to enable or disable the audio function.
5	Input Sensitivity	Set audio input sensitivity to HIGH or LOW
6	Audio Out Volume	Select enable or disable the audio function.

Click the 7 [Apply] button to confirm the settings or click the 8 [Reset] button to re-enter the parameters.

Advance

The “Advance” section includes motion detection settings and camera settings. The motion detection settings section is the same across different cameras. The Camera settings section differs between camera types. Here we describe the Motion Setup section. Click the [Advance] item to see the “Advance Setting Page”.



Advance - Motion Detection Settings

STEP1: Click the Plus sign 3 to expand the Motion Detection settings then Click the Motion Enable checkbox to enable motion detection.

STEP2: Click the 4 checkbox to enable motion detection for each individual region**.**

STEP3: Click one region to start to edit its size and location. You can click the “Adjust Column” to drag motion region to your desired location. You can click the “Adjust Square” and drag to adjust motion region size. You can click the upper right button to cancel this motion region. Repeat above procedure to adjust the motion region.

STEP4: Set the 5 sensitivity of motion detection region.

STEP5: Set the 6 interval time of motion detection. After a motion event is triggered, no more events will be triggered within this time in the same region

STEP6: Set the 7 trigger threshold of motion detection region. The larger this value, the larger the object size needed to trigger motion detection.

STEP7: In motion activity 2 window, the bar shows the motion activity status. You can also

see the trigger threshold (Red line). When the motion activity exceeds the trigger threshold, the bar would become red to indicate that a motion event has been triggered.

While viewing the motion activity window, you can adjust the motion sensitivity (the higher, the easier camera considers video change to be an activity) and the threshold (the higher, the larger the activity needed to trigger a motion event). If the default settings are not satisfactory for your scene, you may try our alternative recommendations of:

Sensitivity: 80, Threshold: 2~5 (for normal environment)
Sensitivity: 80, Threshold: 5~10 (for very noisy environment)

Advance – Camera Settings

The lower half of the Advance page is the Camera Settings section. This portion of the screen will differ between different devices. Different models will have different capabilities and different settings available.

Please refer to this list and find the appropriate manual section for your device.

CMOS Models with WDR:

TCM-1231 / TCM-1232 / TCM-3401 / TCM-3411 / TCM-3511 / TCM-5211 / TCM-5212 / TCM-5601 / TCM-5611 / TCM-7411

CMOS Models without WDR:

TCM-4301 / TCM-4101

CCD Models

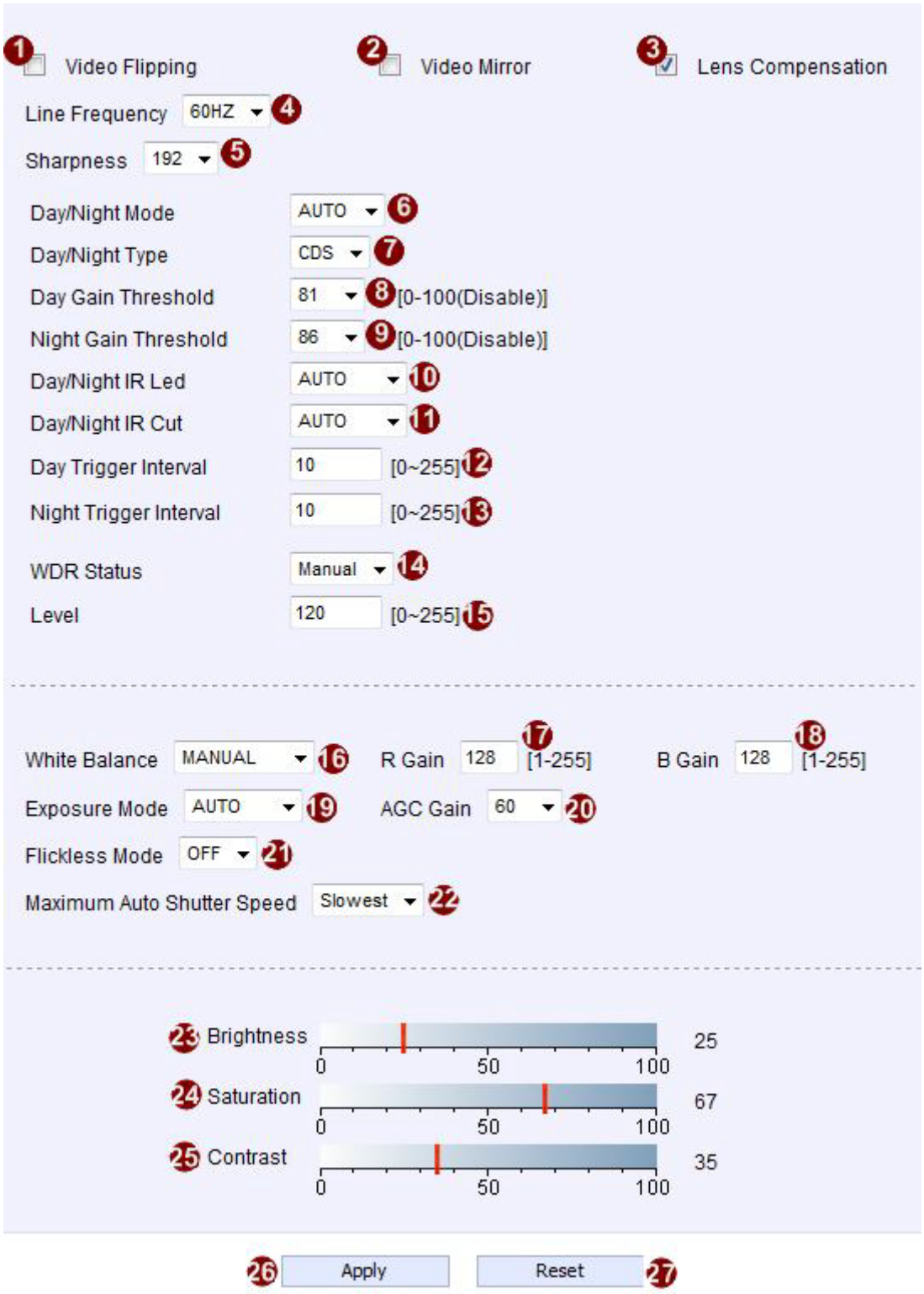
TCM-5311 / TCM-5312

Video Servers

TCD-2500 / TCD-2100

Camera Settings - CMOS Models with WDR

Here is the user interface section for CMOS models with WDR function. Please note that some functions may not be available to all models.


1 Video Flipping
2 Video Mirror
3 Lens Compensation
Line Frequency 60HZ 4
Sharpness 192 5
Day/Night Mode AUTO 6
Day/Night Type CDS 7
Day Gain Threshold 81 8 [0-100(Disable)]
Night Gain Threshold 86 9 [0-100(Disable)]
Day/Night IR Led AUTO 10
Day/Night IR Cut AUTO 11
Day Trigger Interval 10 [0~255] 12
Night Trigger Interval 10 [0~255] 13
WDR Status Manual 14
Level 120 [0~255] 15
White Balance MANUAL 16
R Gain 128 17 [1-255]
B Gain 128 18 [1-255]
Exposure Mode AUTO 19
AGC Gain 60 20
Flickless Mode OFF 21
Maximum Auto Shutter Speed Slowest 22
23 Brightness 0 50 100 25
24 Saturation 0 50 100 67
25 Contrast 0 50 100 35
26 Apply
Reset 27

Adjust the settings as per the following table

	Parameters	Description
1	Video Flipping	Check this box to flip the video up-down
2	Video Mirror	Check this box to mirror the video left-right
3	Lens Compensation	Check this box to use best pre-set settings for bundled lens
4	Line frequency	Change settings between 60Hz or 50Hz, depending on the AC power type of your region.
5	Sharpness	Select the sharpness value
6	Day/Night mode	Select the day/night mode. Auto: The camera would switch between day and night mode automatically. It will follow the Day Gain and Night Gain threshold defined by user below. Day: The camera will stay in day (color) mode. Night: The camera will stay in night (black & white) mode.
7	Day/Night Type	Some models have more than one method of measuring lighting level to decide between Day / Night Mode. Choose between CdS Sensor and DSP Image processor if the model allows for both. If there is only one type of mechanism available, then this setting cannot be changed.
8	Day Gain Threshold	This value controls the level of light where camera switches into Day mode. Increasing it will make camera switch to night mode at a darker illumination level.
9	Night Gain Threshold	This value controls the level of light where camera switches into night mode. Increasing it will make camera switch to night mode at a darker illumination level.
10	Day/Night IR LED	This setting controls whether IR LED will turn on at night. If it is Auto, the IR LED will turn on and off when switching between day mode and Night Mode. Choosing Disable will keep the IR LED off during night mode.
11	Day/Night IR Cut	This setting controls whether IR Cut Filter will be removed at night. If it is Auto, the IR LED will turn on and off when switching between day mode and Night Mode. Choosing Disable will keep the IR LED off during night mode.

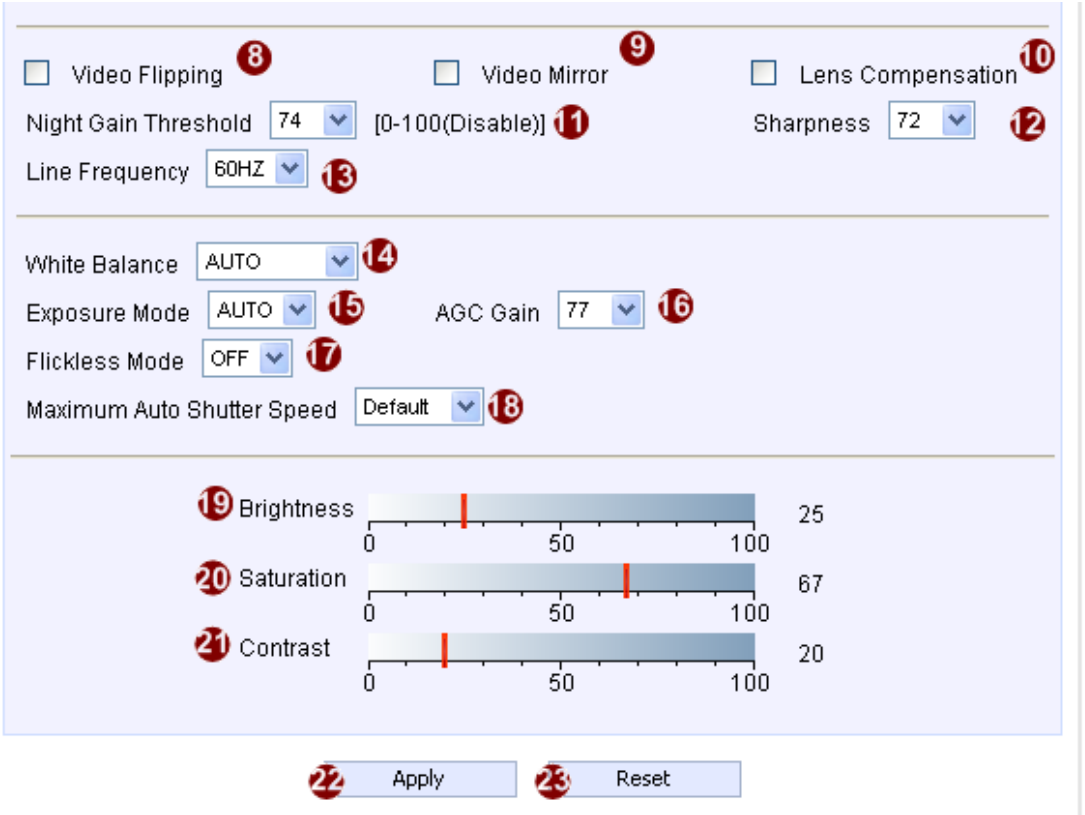
⑫ Day Trigger Interval	This setting is the delay between lighting level change and actually switching to day mode, described in seconds. This is because in actual scenes, there may be brief periods of light in night time, such as a headlight from approaching car. This prevents from unnecessary Day/Night changes.
⑬ Night Trigger Interval	This setting is the delay between lighting level change and actually switching to night mode, described in seconds. This is because in actual scenes, there may be brief periods of darkness during daytime. This may be caused by passing clouds or temporary blocks before the camera. This prevents from unnecessary Day/Night changes.
⑭ WDR Status	This setting determines whether to use the WDR function or not. Select disable to stop using WDR image processing. Select Default to enable WDR with the default level of 120, which provides moderate image enhancement. Select manual to change the WDR level yourself and see what is the best value for your scenario.
⑮ Level	This option will only appear if WDR Status is set to “Manual”. The higher the value, the more strongly the camera tries to balance the light and dark areas. The lower the value, the more closely the image resembles the raw video. Try and see what value suits your scene best.
⑯ White Balance Mode	Select the white balance mode. You need to wait for 5~10seconds to see the final result. 1. AUTO : Auto white balance (default) 2. INDOOR1: Select the indoor white balance profile 1. 3. INDOOR2: Select the indoor white balance profile 2. 4. OUTDOOR1: Select the outdoor white balance profile 1. 5. OUTDOOR2: Select the outdoor white balance profile 2 6. HOLD CURRENT: Select this to let the IP camera automatically obtain a best white balance setting according to current environment. The IP camera will use this setting to adjust color. NOTE: This setting will be lost after you reboot the camera. 7. MANUAL: Select this to enable manual setting of the white balance. You will need to enter the R Gain and B gain setting below.

17	R Gain (Manual White balance mode only)	Add or decrease redness to the video when under Manual White Balance mode. (This function is only available in Manual White balance mode.)
18	B Gain (Manual White balance mode only)	Add or decrease blueness to the video when under Manual White Balance mode. (This function is only available in Manual White balance mode.)
19	Exposure mode	Select exposure mode to auto or manual. 1. Auto: The IP camera will adjust the exposure automatically. 2. Manual: (In Manual White balance mode only) Manually select the Exposure Gain and Shutter Speed below.
20	AGC Gain (In auto Exposure mode only)	Auto Gain Control value determines how much should the signal be amplified. The higher AGC Gain value, the brighter the image. In dark scenes, lower AGC Gain will reduce noise level.
●	Exposure Gain (In Manual Exposure Mode only)	Select the exposure Gain of the IP camera. The higher the value = brighter images.
●	Shutter Speed (In Manual Exposure Mode only)	Increase or decrease the shutter speed. The closer the number is to 1, the better nighttime performance is, although this also causes motion blur to the video.
21	Flickless Mode	Enable the flickless or disable the flickless mode.
22	Maximum Auto Shutter Speed (In auto Exposure mode only)	In auto exposure mode, IP camera will slow down the shutter to increase exposure time under low light. This controls the maximum amount of exposure time. Lengthen the time to allow for sharper image at night, shorten to reduce motion blur.
23	Brightness	Select the brightness value
24	Saturation	Select the saturation value
25	Contrast	Select the contrast value

Click the 26 [Apply] button to confirm the settings or click the 27 [Reset] button to re-enter the parameters.

Camera Settings - CMOS Models without WDR

Here is the user interface section for CMOS models without WDR. Please note that some functions may not be available to all models.



Adjust the settings as per the following table

Parameters		Description
8	Video Flipping	Check this box to flip the video up-down
9	Video Mirror	Check this box to mirror the video left-right
10	Lens Compensation	Check this box to use best pre-set settings for bundled lens
11	Night Gain Threshold	This value controls the level of light where camera switches into night mode. Increasing it will make camera switch to night mode at a darker illumination level.
12	Sharpness	Select the sharpness value
13	Line frequency	Change settings between 60Hz or 50Hz, depending on the AC power type of your region.
14	White Balance Mode	Select the white balance mode. You need to wait for 5~10seconds to see the final result. 8. AUTO : Auto white balance (default) 9. INDOOR1: Select the indoor white balance profile 1. 10. INDOOR2: Select the indoor white balance profile 2.

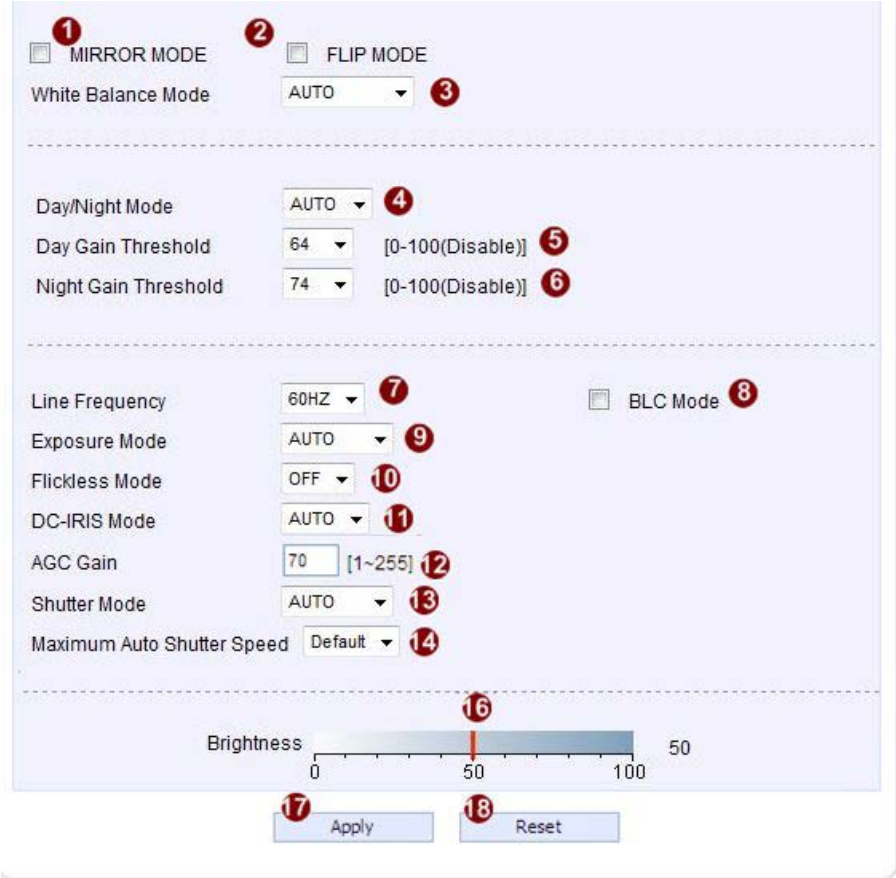
		11.OUTDOOR1: Select the outdoor white balance profile 1. 12.OUTDOOR2: Select the outdoor white balance profile 2 13.HOLD CURRENT: Select this to let the IP camera automatically obtain a best white balance setting according to current environment. The IP camera will use this setting to adjust color. NOTE: This setting will be lost after you reboot the camera. 14.MANUAL: Select this to enable manual setting of the white balance. You will need to enter the R Gain and B gain setting below.
●	R Gain (Manual White balance mode only)	Add or decrease redness to the video when under Manual White Balance mode. (This function is only available in Manual White balance mode.)
●	B Gain (Manual White balance mode only)	Add or decrease blueness to the video when under Manual White Balance mode. (This function is only available in Manual White balance mode.)
15	Exposure mode	Select exposure mode to auto or manual. 3. Auto: The IP camera will adjust the exposure automatically. 4. Manual: (In Manual White balance mode only) Manually select the Exposure Gain and Shutter Speed below.
16	AGC Gain (In auto Exposure mode only)	Auto Gain Control value determines how much should the signal be amplified. The higher AGC Gain value, the brighter the image. In dark scenes, lower AGC Gain will reduce noise level.
●	Exposure Gain (In Manual Exposure Mode only)	Select the exposure Gain of the IP camera. The higher the value = brighter images.
●	Shutter Speed (In Manual Exposure Mode only)	Increase or decrease the shutter speed. The closer the number is to 1, the better nighttime performance is, although this also causes motion blur to the video.
17	Flickless Mode	Enable the flickerless or disable the flickerless mode.
18	Maximum Auto Shutter Speed (In auto Exposure mode only)	In auto exposure mode, IP camera will slow down the shutter to increase exposure time under low light. This controls the maximum amount of exposure time. Lengthen the time to allow for sharper image at night, shorten to reduce motion

	blur.
19 Brightness	Select the brightness value
20 Saturation	Select the saturation value
21 Contrast	Select the contrast value

Click the 22 [Apply] button to confirm the settings or click the 23 [Reset] button to re-enter the parameters.

Camera Settings - CCD Cameras

Here is the user interface section for CCD models.



Adjust the settings as per the following table

Parameters	Description
1 Mirror Mode	Check this box to flip the video up-down
2 Flip Mode	Check this box to mirror the video left-right
3 White Balance Mode	Select the white balance mode. After you set the parameter, you need to wait for 5~10seconds to see the final result. 1. AUTO : Auto white balance (default) 2. INDOOR1: Select the indoor white balance profile 1. 3. INDOOR2: Select the indoor white balance profile 2. 4. OUTDOOR1: Select the outdoor white balance profile 1. 5. OUTDOOR2: Select the outdoor white balance profile 2 6. HOLD CURRENT: Select this to let the IP camera automatically obtain a best white balance setting according to current environment. The IP camera will use this setting to adjust color.

	NOTE: This setting will be lost after you reboot the camera. 7. MANUAL: Select this to enable manual setting of the white balance. You will need to enter the R Gain and B Gain setting below.
R Gain (Manual White balance mode only)	Add or decrease redness to the video when under Manual White Balance mode. (This function is only available in Manual White balance mode.)
B Gain (Manual White balance mode only)	Add or decrease blueness to the video when under Manual White Balance mode. (This function is only available in Manual White balance mode.)
4 Day/Night mode	Select the day/night mode. Auto: The camera would switch between day and night mode automatically. It will follow the Day Gain and Night Gain threshold defined by user below. Day: The camera will stay in day (color) mode. Night: The camera will stay in night (black & white) mode.
5 Day Gain Threshold	This value controls the level of light where camera switches into day mode. Increasing it will make camera switch to day mode at a darker illumination level.
6 Night Gain Threshold	This value controls the level of light where camera switches into night mode. Increasing it will make camera switch to night mode at a darker illumination level.
7 Line Frequency	Change settings between 60Hz or 50Hz, depending on the AC power type of your region..
8 BLC Mode	Enable or disable the back light compensation mode.
9 Exposure mode	Select exposure mode to auto or manual. 1. Auto: The IP camera will adjust the exposure automatically. 2. Manual: (In Manual White balance mode only) Manually select the Exposure Gain and Shutter Speed below..
10 Flickless Mode	Enable the flickless or disable the flickerless mode
11 DC-Iris mode	Select DC IRIS mode to auto or off. 1. Auto: The IP camera will adjust the Iris automatically. 2. Off: The iris is fixed.
12 AGC Gain (In auto Exposure	When exposure mode is auto, IP camera will adjust its shutter speed according to AGC gain and the Maximum auto shutter

mode only)	speed. Higher AGC gain = brighter images.
⓭ Shutter mode	Select exposure mode to auto or manual. 1. Auto: The IP camera will adjust the shutter automatically. 2. Manual: Manually select the Shutter Speed below.
⓮ Maximum Shutter Speed (In auto shutter mode only)	When exposure mode and shutter mode are auto, IP camera will adjust its shutter speed according to AGC gain and the Maximum auto shutter speed. This setting is to set the maximum shutter speed range of this camera.
⓯ Exposure Gain (In Manual Exposure Mode only)	Select the exposure Gain of the IP camera. The higher the value = brighter images.
⓰ Shutter Speed (In manually shutter mode only)	Increase or decrease the shutter speed. The closer the number is to 1, the better nighttime performance is, although this also causes motion blur to the video.
⓰ Brightness	Select the brightness value

Click the ⓱ [Apply] button to confirm the settings or click the ⓲ [Reset] button to re-enter the parameters.

Camera Settings - Video Server

This section tells you how to setup the Advance settings of H.264 Video Servers. (Motion Detection setting is the same as cameras). WDR related functions may not be available for some models. Please check IP device spec for details.

Adjust the settings as per the following table

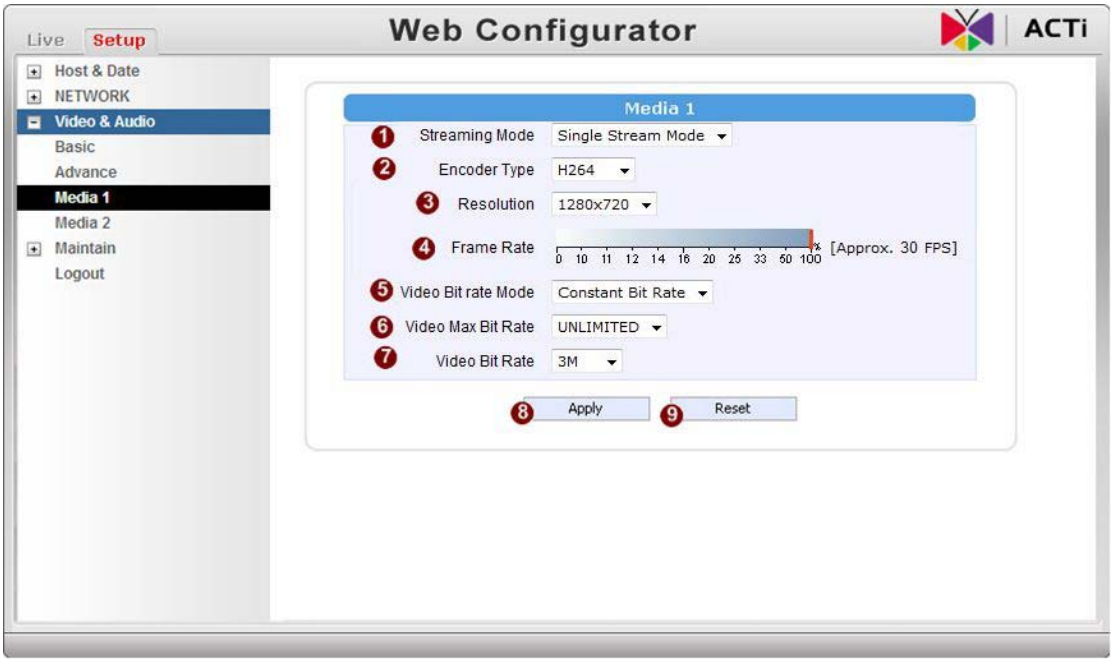
Parameters	Description
1 Deinterlace	Select the method used for calculating video deinterlacing 1. 3D deinterlacing: Provides clearer image when movement speed within view is moderate 2. Intra : Provides clearer moving edge but at lower clarity.
2 Digital Noise Reduction	Choose to enable or disable Digital Noise Reduction
3 Black Level Extension	Choose to turn Black Level Extension on, off or use manual setting. Black Level Extension will automatically shift the darkest part of the scene to completely dark, thus increasing maximum available contrast. It is useful in situations where the whole scene is blurred white as in heavy fog.

4	Skin Tone Enhancement	Automatically detects skin color, and softens the image around skin area to cover skin blemishes. Can be turned on, off or use manual settings.
5	Sharpness	Use this to enhance image sharpness. User may turn this on, off or use manual settings.
6	WDR Color Mode	Modulates overly bright or dark areas, so that you can see detail at extreme ends of illumination. Can be turned on, off or use manual settings.
7	Brightness	Select the brightness value
8	Saturation	Select the saturation value
9	Contrast	Select the contrast value

Click the 10 [Apply] button to confirm the settings or click the 11 [Reset] button to re-enter the parameters.

Media 1&2

Click the [Media 1] or [Media 2] item to display the "Media Setting Page". Refer to the table below for how to configure each setting.



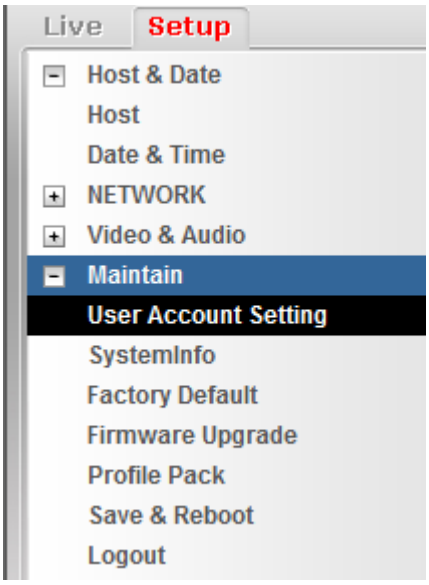
	Parameters	Description
1	Stream Mode	Select the encoder's streaming mode. **Dual Stream Mode:** In this mode, the IP camera/video server can

		send two types of streams with different configurations, including resolution, frame rate, compression type and bit rate. You can setup each stream in [Media 1] and [Media 2]. **Single Stream Mode:** In this mode, the IP camera/video server will send streams with the same configuration including resolution, frame rate, compression and bit rate.
2	Encoder Type	Select the encoder's compression type. MPEG-4 / MJPEG / H.264
3	Resolution	Select the video resolution of the IP device.
4	Frame rate	Select the frame rate by clicking and dragging the red stick. Click [Apply] to update and see the new frame rate.
5	Video Bit Rate Mode	Select the video bit rate mode. **Constant Bit Rate**: The video bit rate remains constant at all conditions. **Variable Bit Rate**: The video bit rate will vary based upon scene complexity and amount of movement. The quality will remain the same.
6	Video Max Bitrate	This puts a hard cap on the maximum bit rate allowed in any given second of video streaming. Assigning a limited bit rate may result in a few dropped frames rate when the stream data overflows the allowed bit rate. Doing so will also disable Bit Rate setting below.
7	Bitrate	Select the bit rate of the video streaming. You can select from 28Kbps to 6Mbps. **Note**: Lower bit rate consumes less bandwidth but delivers lower quality images. High bit rate consumes more bandwidth but delivers higher quality images.
●	Quality	1. When encoder type is MJPEG: Select the quality value of MJPEG encoder type from 1 to 100. 2. When encoder type is MPEG4 or H.264, and video bitrate mode is "Variable Bit Rate" Select the quality value from High / Middle / Low

Click the 8 [Apply] button to confirm the settings or click the 9 [Reset] button to re-enter the parameters.

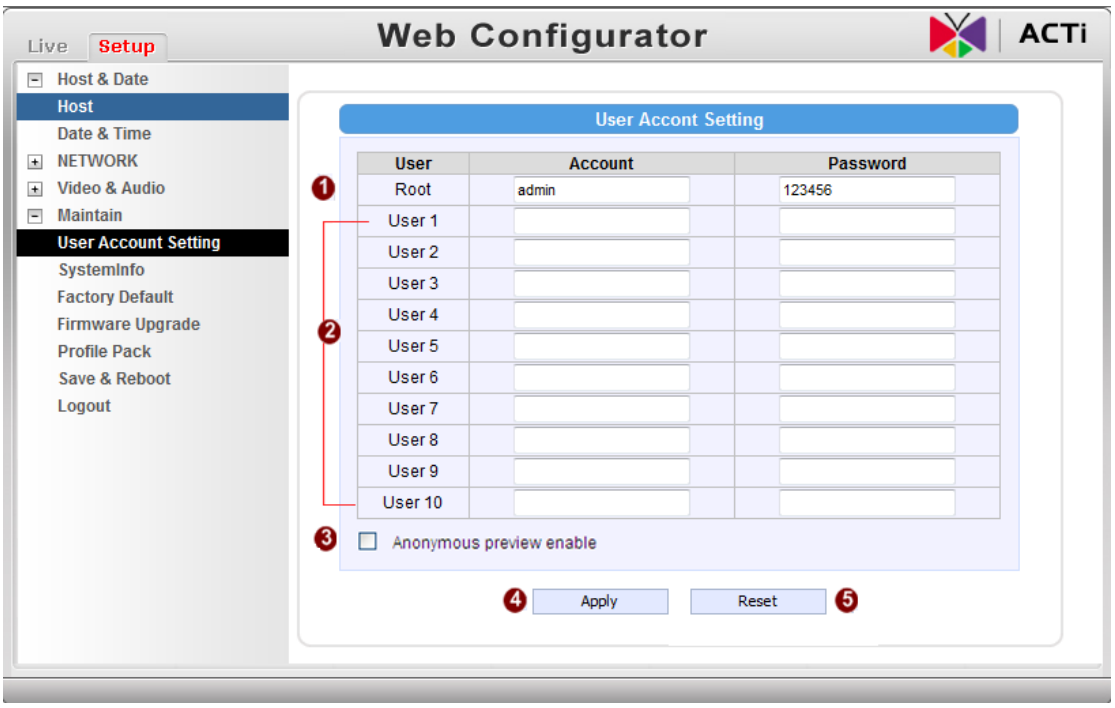
Maintain

Click the [Maintain] item on the "Setup Page".



User Account Setting

Click the [User Account Setting] item to display the "User Account Setting Page".



Setup the account names and their respective passwords. There are 1 root (administrator) 1 account and 10 common user accounts 2. Administrator account allows the user to watch the live view and setup everything; but common user account allows user only to watch the live

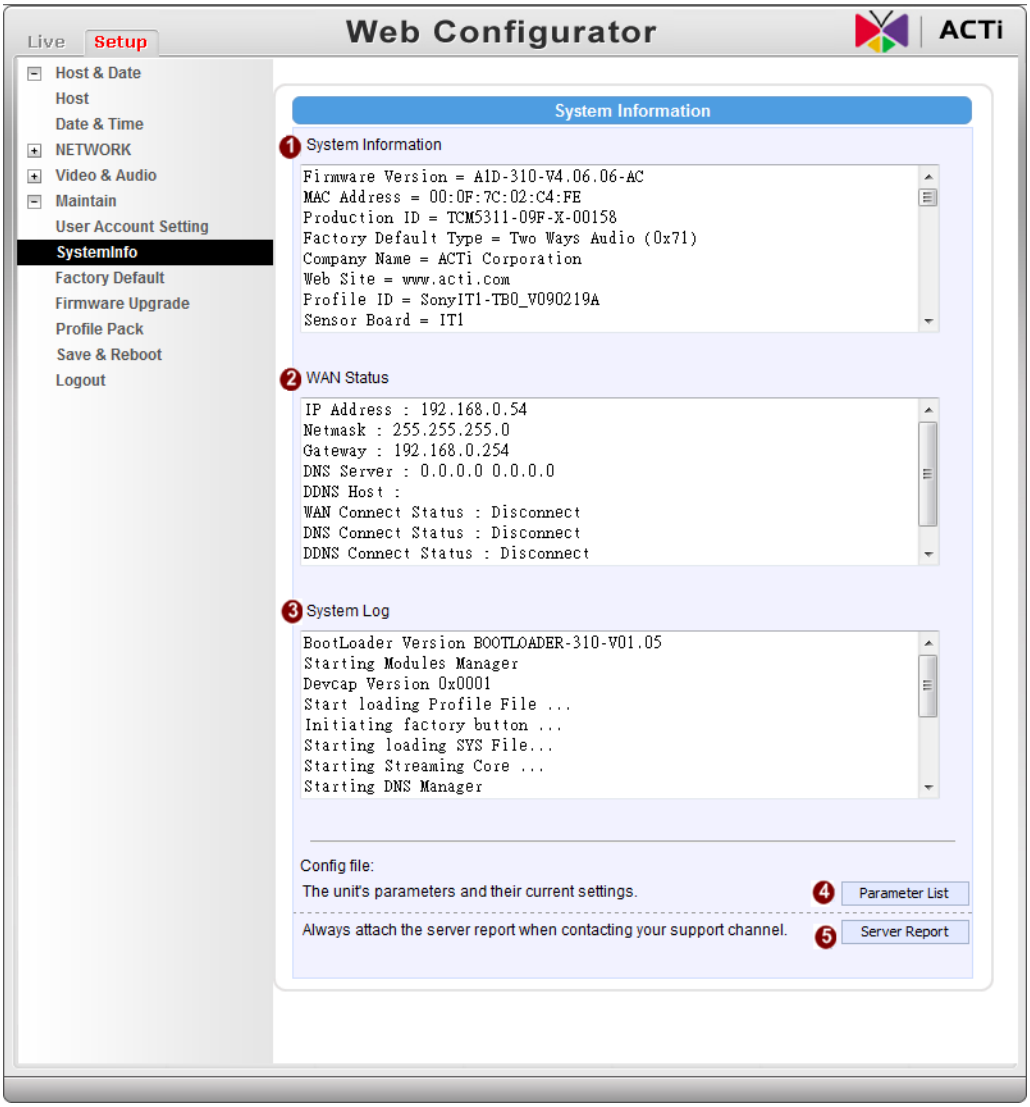
image.

Click the check box 3 to enable "Anonymous preview". When it is enabled, user can login this camera to view video without input account and password. But user will be required to input account and password if they want to change any setting

Click the 4 [Apply] button to confirm the settings or click the 5 [Reset] button to re-enter the parameters.

System Info

Click the [System Info] item to display the "System Information Page". This shows details about this IP device including system information, WAN status and system log. Refer to the table below for how to configure each setting.



View the information at the 3 textboxes. This information is very useful to understand the IP

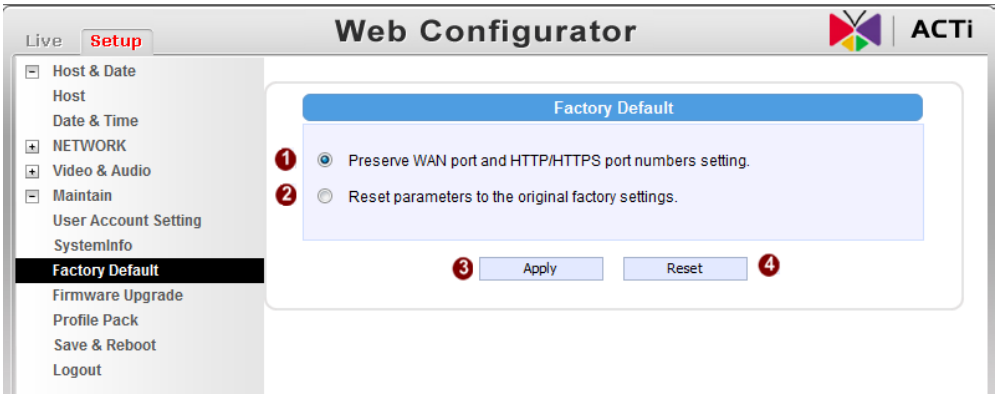
device status and to resolve any problem that might occur.

Column	Description
❶ System info	It shows the firmware version, MAC address, production ID, and factory default type of IP device.
❷ WAN status	It shows the WAN port's IP address, netmask, gateway, DNS server, DDNS host and connection status.
❸ System log	It shows the system event. This column is very useful to as a diagnostic tool.

Click ❹ [Parameter List] where you may see all configurations of the IP device.
Click ❺ [Server Report] to export related information of the IP device while reporting a support to your support channel.

Factory Default

Click the [Factory Default] item to display the "Factory Default Page".

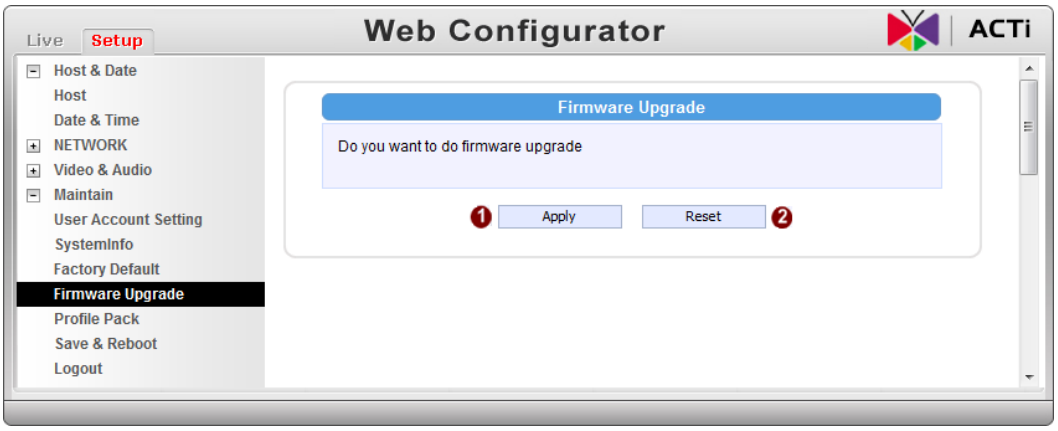


If you want to keep network settings and restore other settings to factory default, please click radio box ❶. If you click ❷ instead , all the settings would be lost. You will have to use factory default IP setting to connect to this camera. Please refer to previous login section.
If you want to reset all setting to default, click to select this radio box ❷ .

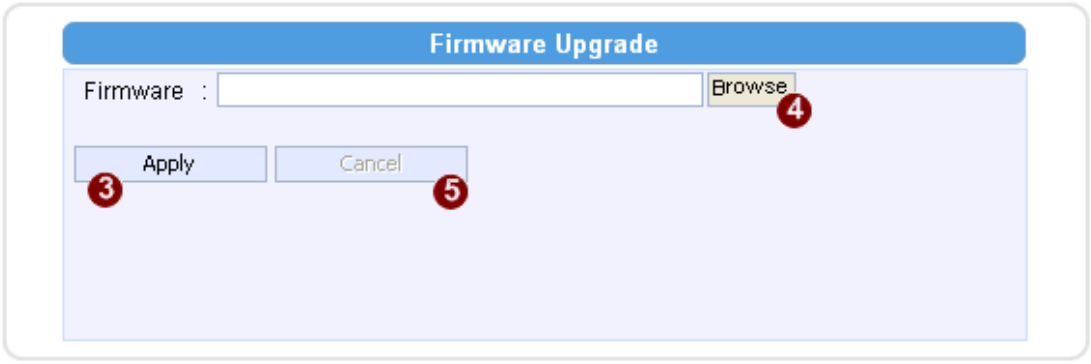
Click the [Apply] button to show a warning dialog that reminds you again before restoring the device to factory default.

Firmware Upgrade

Click the [Firmware Upgrade] item to display the "Firmware Upgrade Page". Upgrade the IP device's firmware through this page with the following instructions.



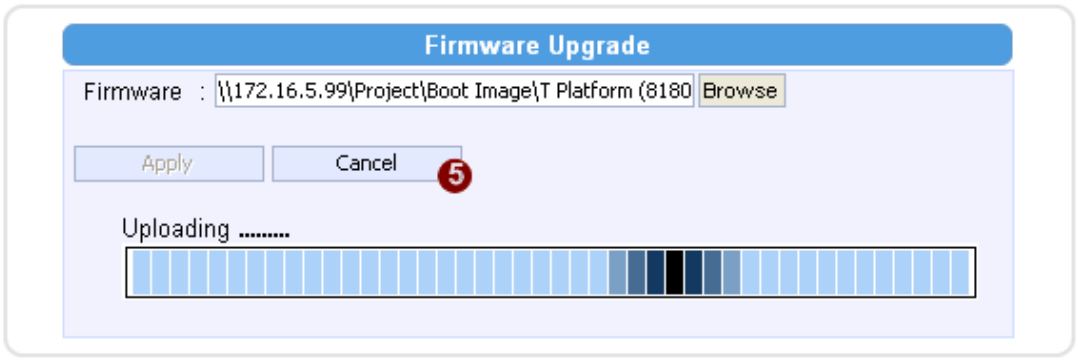
Click 1 [Apply] button. The "Firmware Upgrade Page-2" will be displayed as below.



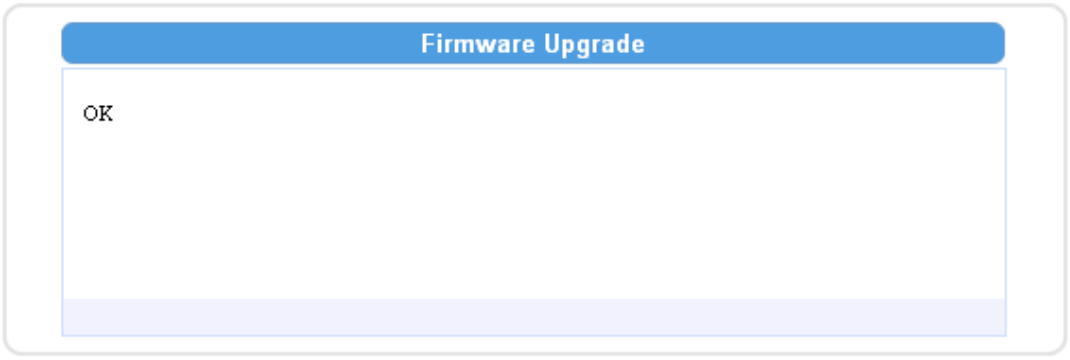
Click the 4 [Browse] to select the upgrade image file and click the [enter]. You can always get the latest version at our website.

Click the 3 [Apply] button to start upgrading

The upgrade process window will show a progress bar indicating upgrade status. You can click the 5 [Cancel] button to stop the firmware upgrade.



Once the process is finished, the progress bar will show the upgrading as OK, and reboot the IP device system.

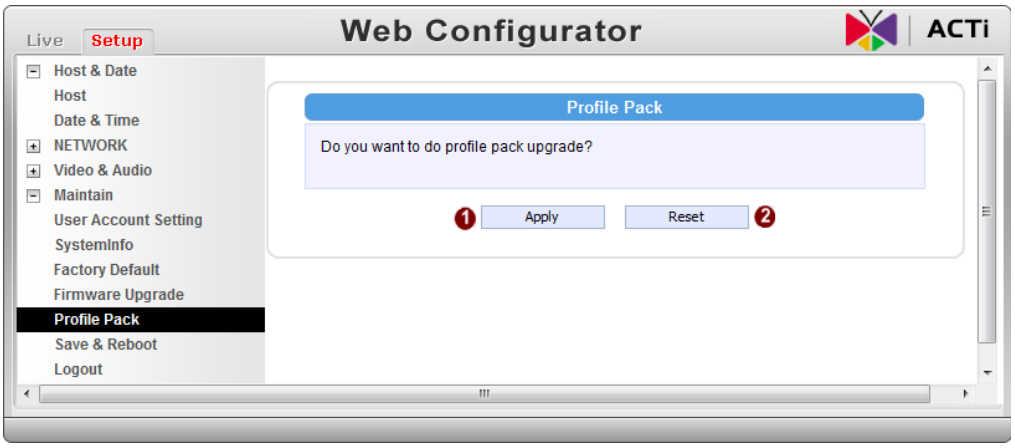


NOTE: If you cancel the firmware upgrade during upgrade process, the browser window will be closed

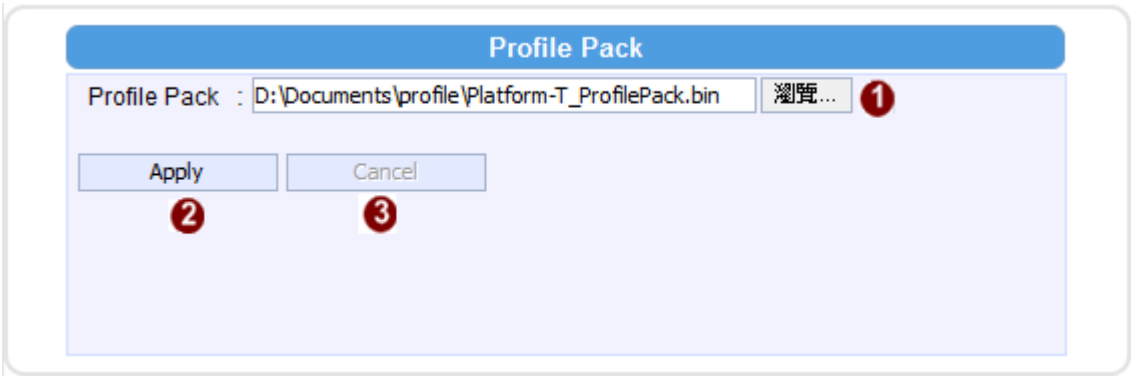
Profile Pack

Profiles are sets of parameters that control how the image sensor behaves. Sometimes profiles are fine-tuned again to suit a specific environment, or for generally better image. They are not updated as frequently as firmware, and a good profile can stay in use for a very long time. Occasionally, you may wish to load a new profile pack into your camera. This section tells you how to upgrade IP Camera's Profile Pack.

Click the [Profile pack] item to display the "Profile Pack Page".



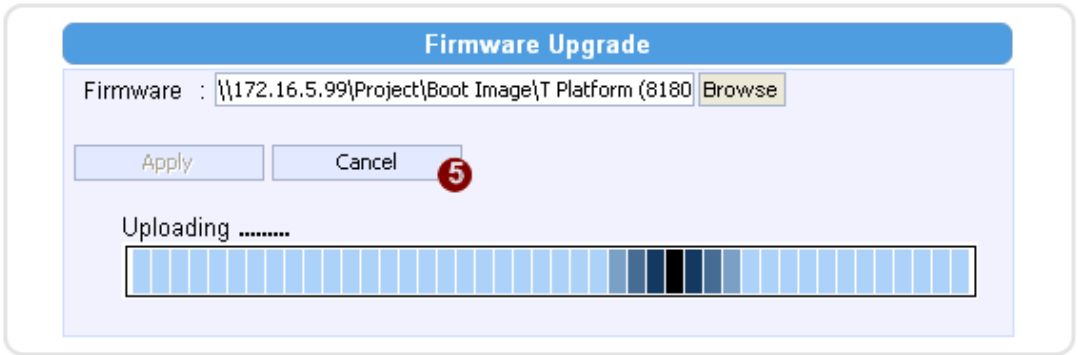
STEP1: Click 1 [Apply] button. The ''Profile Pack Page-2" will be displayed as below.



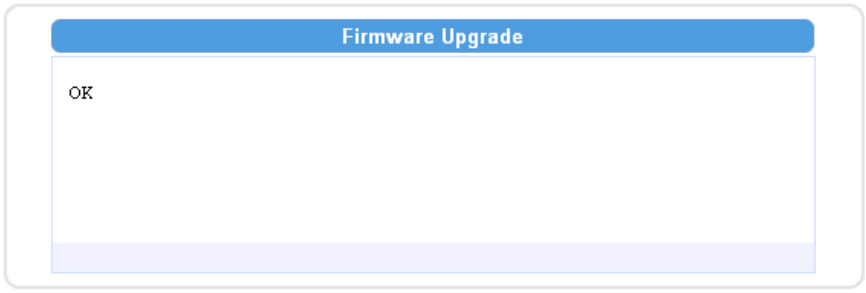
STEP2: Click the 1 [Browse] to select the new profile pack and click [enter]. You can always get the latest version at our website.

STEP3: Click the 2 [Apply] button to start upgrading

STEP5: The upgrade process window shows a progress bar indicating upgrade status. You can click the 3 [Cancel] to stop the firmware upgrade.

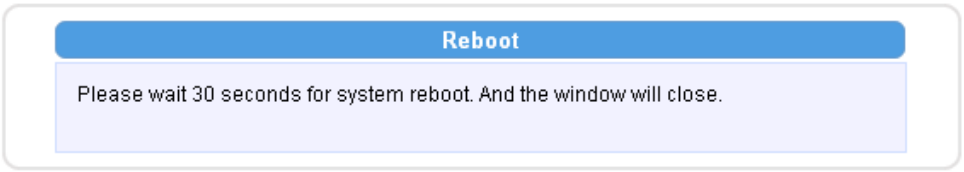


STEP6: The progress bar shows the upgrading is completed, and system is rebooting.



Save & Reboot

This section tells you how to save all the settings and reboot this IP device. This is critical because some settings might not take effect before save and reboot. Click the [Save & Reboot] item to display the "Reboot Page".



The Action LED indicator will go dark to indicate that the IP device is rebooting. After around 30 seconds, the Action LED will light up again to indicate that the reboot is completed.

Logout

Clicking this item allows you to log out of the IP device. Be sure to logout this IP device once your setting is completed.